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Journal of Home Economics

CORRELATION IN VIRGINIA HOME ECONOMICS PROGRAMS

MAUDE E. WALLACE

A CHARACTERISTIC of the Virginia Home Economics Association is that it serves as a melting pot for all the interests within the field of home economics. The homemaking programs now operating in the various counties are so complex and the need for more and better co-ordination of these programs is increasing so fast that in connection with the Association's meeting last March it was felt opportune to show just how the various agencies work together. This was done through a symposium on "Possibilities of Correlating the Work of Different Fields of Home Economics in Virginia." Maude E. Wallace, assistant director of extension in charge of home demonstration work, was the leader. The following speakers represented different fields of work:

Selma Andrews, Roanoke, home economics in business

Josephine Walker, Madison College, Harrisonburg, home economics in college teaching

Ella Luck, Richmond, Farm Security Administration

Myrtie Keller, Richmond, Work Projects Administration

Margaret Fitzhugh, Richmond, dietitians and cafeteria department in the public schools

Sarah Thomas, Richmond, National Youth Administration

Chilton Ryburn, Wytheville, home demonstration work

Mrs. Louise K. Ozlin, Kenbridge, homemaking

The first half of the time was used to allow each agency to tell briefly just what it is and does. These reports included such items as sources of money, history, objectives, and scope of work; but the most interesting contributions were the accounts of co-ordination of effort.

Miss Ryburn, home demonstration agent, told about the county homemaking boards. Each of these boards is made up of rural women with one representative from each home demonstration club in the county. Women representing the home economics program in the public schools and the home economics work of the Farm Security Administration also meet with it and serve as advisers, though they are not members. The representatives mentioned always form the backbone of the board, but in some counties it includes in addition representatives of the N.Y.A., the department of health, the department of welfare, and other agencies.

The main purpose of the homemaking board is to provide a group of responsible women leaders in each county through which all the programs of the various agencies may function, thus accomplishing more and avoiding duplication. Because the program is planned and carried out through the homemaking board, the women are feeling more responsibility and are beginning to think of these programs as their work.

Miss Walker, critic teacher at Madison College, told how in Charlotte County the Farm Security supervisor, the home demonstration agent, the agricultural teacher, the home economics teacher, and the elementary school teacher had centered their co-operative planning around types of services which could be developed in home and family life education. They do a certain amount of home visiting together so that they will understand the actual living conditions; then they make plans with the families which will lead them to improve these conditions.

Miss Thomas reported that one of the most outstanding cases of correlation between the N.Y.A. and home economics fields is the resident homemaking center which the N.Y.A. has opened in Hillsville, Carroll County. When plans were being made to open the Hillsville resident center, the first idea was to organize an advisory board for the project, but an invitation came from the county homemaking board to join that organization. The N.Y.A. saw this as a real opportunity, and its representative took a place on the board. After the N.Y.A. resident center was opened, the county homemaking board held its first meeting there, so that each member had an opportunity to learn more about the new N.Y.A. project. Plans for a county health campaign were developed at this meeting, and the N.Y.A. made the success of this campaign one of its goals.

The home demonstration agent co-operates with the N.Y.A. in following up the home work of the girls during the time they are at home. It is hoped that later these young people who have been in the homemaking center will be able to assist in local extension activities.

Within a few days after that first meeting, several mothers brought their daughters to the N.Y.A. center to apply for entrance. Members of the homemaking board had carried the message back to the isolated areas that the N.Y.A. was an opportunity to youth.

Miss Luck reported on the Old Dominion Home Industries Cooperatives in Virginia, which is sponsored by the Farm Security Administration, with the co-operation of the Extension Service, the W.P.A., the N.Y.A., and others. Its purpose is to provide a marketing outlet for Virginia farm families and craftsmen who wish to supplement their incomes by the sale of specialized farm and home products.

The market is incorporated under the Agricultural Cooperative Regulations of the state, and the organization is managed by a board of directors composed of farm men and women. It operates on a self-supporting basis, the cost being borne by those who sell goods through the market.

Articles sent from all over the state are received by a local standards committee composed of the Farm Security home supervisor, the market or shop manager, and four near-by home demonstration agents. The agents take turns at serving with the supervisor and the manager in examining articles received and deciding on their acceptability for the shop.

This local standards committee works in close touch with the state standards committee, which was established before the market was opened to supervise the standards set for articles accepted and to advise with the local committees. This state committee is composed of the assistant director of extension in charge of home demonstration work, the associate director of the state Farm Security Administration, and the person in charge of the women's work program of the W.P.A.

The market, which is like a shop, is located on Highway No. 1 about seventeen miles north of Fredericksburg in Stafford County. From November 1938, when the shop opened, to December 31, 1939, 9,927 articles were accepted by the standards committee; they were valued at about

$10,000 and sent in by 395 people from 81 counties of Virginia. Sales of 5,616 articles brought in a total of $4,485.

Myrtie Keller, representing the W.P.A., reported the following instance of co-ordination of effort:

The school lunch project is a splendid example of correlation. The purpose of this project is to furnish hot nutritious lunches to needy children and to give work to needy unemployed women in their own communities. It is sponsored by the State Board of Education and co-sponsored by local school boards assisted by the P.T.A., home demonstration clubs, and other civic organizations. The State Board of Education gives certain financial aid for supervision; the W.P.A. pays labor costs; and all other costs are borne by the local communities.

The technical development of the project is under the direction of the state supervisor of home economics education who is correlating the work of her teachers and the lunchrooms in many schools.

The lunchrooms are of two types: W.P.A. operated and W.P.A. assisted. In the first instance, all supervision and labor is furnished by the W.P.A., while in the latter the W.P.A. furnishes the labor only.

This project operates in 69 counties, 15 cities, and 432 localities employing approximately 700 people. In round numbers, 20,000 free lunches are served daily to needy children and 18,000 to children who can pay in cash or kind.

It is in these local communities that many home economists have correlated their efforts. The home demonstration agents and home economics teachers give instruction in food preservation, preparation, and menu making. Home economics teachers supervise the preparation and serving of lunches in their schools. Homemakers, and especially the home demonstration club women, serve as active members of local committees and render valuable service in the many phases which go into the successful operation of a lunchroom.

Mrs. Louise Ozlin, representing homemakers, touched the high spot of all the reports when she said:

It is difficult for homemakers to give any specific instance of correlation, as we are the melting pot of all the agencies working in our communities. These agencies working in our communities on homemaking problems exist because we, as homemakers, are already there and need them. Our problems are their problems. We are their laboratories. Our part in correlation has been in serving on their committees and homemaking boards, in determining our most pressing needs, and in seeing that the proper agency knows those needs.

In order to bring about a better correlation, we feel that more information is needed by each homemaking agency concerning the scope of the others. The workers of these agencies in the communities are limited in their fields, but the homemaker is a part of all of them; and by working more closely with the homemakers in planning the work programs of these agencies, we feel that the existing needs will be met.

The job of the homemaker is to see after the welfare of her family, to be responsible for the enrichment of the life of its various members, and to preserve those ideals of home life that we, as American women, believe to be the most desirable characteristics of America. We need the intelligent and co-operative work of all of these agencies to help us, and as the job is so great the homemaking agencies must work out a system of correlation in order that the greatest number of needs be met.

SPEAKING OF HOUSING AGAIN

MURIEL W. BROWN

A TIMID excursion into the field known, somewhat vaguely, as "housing" has left the writer with the feeling that some very interesting people are having some very interesting ideas about houses and about some of the everyday problems which arise in connection with our living in them.

Among the most pressing of these problems are some with which teachers are primarily concerned—the always perplexing problems of curriculum planning which inevitably come up when any area of human experience is getting a new educational organization. What are the fundamental principles which ought to guide this new organization? Who needs to learn what? What are the best kinds of learning situations to set up? Where are the materials with which to implement these learning situations?

These are some of the questions on which a good deal of time was spent at the North Atlantic regional conference of state supervisors and teacher trainers in home economics held in New York in April. Various aspects of the housing problem were emphasized in general sessions and section meetings, and a committee on the teaching of housing at the secondary level made a report of its year's work.

Lawrence Frank's analysis, at the opening meeting, of certain ideas which seem fundamental for all curriculum planning in family life education keynoted the conference. Family life has, in the past, been a by-product first of home industry, then of housekeeping. Now it is seen to be an end in itself. The values which make this end important are human values. Our chief concern as teachers is to help our students to see more clearly what some of these values are and how family experience can be made to yield them. What are the designs for family living which best serve these human values? We realize that no single pattern or standard of living can be urged for everyone, but what are the bases on which the style of family life is chosen? What are the persistent values to be served in each generation, each family, through new ideas, new tasks, new procedures? How can we free ourselves from the compulsion to follow blindly ideas which recurrently lead to defeat? Where are the sanctions for interrupting the continuity of the past with respect to those fundamental ideas which have been the warp and woof of older family patterns?

Remote from the matter of housing as some of this thinking may seem, it is the frame of reference within which we must work. Houses are means, resources, materials, tools, with which we meet certain basic needs and express certain fundamental values. Because the need for shelter is universal and because the materials to satisfy this need have to be produced, secured, and used by entire populations, housing is an economic and a sociological as well as a psychological problem. We all agree that the individual house should meet the needs of the family which uses it; whether or not it can do so depends on many factors beyond the control of any single family group. So, when we study housing, we are necessarily interested not only in helping Mary Jones to see what her house has to do with the happiness of her family and her own enjoyment of family

life; we are even more concerned with helping both Mary Jones and her brother to understand that housing in a democratic society is a community concern about which good citizens expect eventually to do something.

It is interesting, in this connection, to note a growing tendency, especially in some parts of the Middle West, to revise the relationship between education and construction which has prevailed so far in the building of most of the big housing projects. To put up the plants and then organize study groups and consultation services to protect the use of them is probably far less sound a procedure, from all relevant points of view, than to have the projects grow out of well-established educational programs which have revealed specific needs and suggested specific ways of meeting them. There is much more than a grain of truth in the fervent remark of a Kansas real estate man who said, with deep conviction, at a recent luncheon meeting: "You can't house a man until he has aspirations for a house," meaning, by aspiration, recognition of need and intent to satisfy it.

The attitudes and understandings which discipline these aspirations in people develop slowly through years of firsthand experience with family attitudes and understandings beginning in early childhood. Just what the school can do to help with the orderly development of intelligent ideas and feelings about housing is not yet entirely clear, although we feel an increasing responsibility for offering the right kind of help. Our first step is probably to be sure that our own thinking is realistic. It must be hard for children who live in simple farm homes to learn much that is useful to them about housing from units of work based on the dream houses for Suburbia illustrated in our best magazines. As a profession we have often been accused by mental hygienists of being escapists, compensating for our own disappointments by living in lovely private worlds, justifying our retreats to ourselves by rationalizing our castles in Spain into "standards of living" for other people.

A home economics teacher of housing needs to check her thinking on three levels. She must know what the national and regional housing surveys have to tell us about how American people really live and why it is so difficult to secure better housing for large numbers of people at the present time. She must know what generalizations about housing conditions can be made and how housing needs can be met on a state or district basis. And, finally, she must know what the homes are like from which children come every day to her classroom, and what probably can be done to deal with their specific problems.

The North Atlantic regional conference offered help and suggestions on each of these levels. At general sessions, opportunity was provided for the study of large wall charts showing graphically some of the findings of national and regional housing surveys. The significance of this material was then discussed by committees and special interest groups.

The facts presented seemed to have three major implications. The first inference, derived from studies of income distribution (*1*), is that *most of the families in the United States have very little money to spend for anything at all, including shelter*. Unusual is the town in which half the families have yearly incomes as high as $1,500. Eighty-seven per cent of American families have less than $2,500 a year with which to meet all of their needs. These averages alone would tell us that much of our high school home economics teaching is pitched for too high an economic level, but as we break the figures down we begin to see what ostriches we really have been. Fourteen per cent of American families live on annual incomes of less than $500. When one stops to think that $500 a year probably means a home in

a tenement, a shack, or a trailer body, one feels a little apologetic about some of the laboratory equipment which we have considered indispensable. The seven per cent of families with annual incomes of $3,000 or more at the other end of the economic scale provide so small a proportion of the total number of children in our public schools that it is hard to justify a curriculum based upon their needs and adjusted to their mode of living.

The second inference is a corollary of the first. Since averages tell us "what" but not "where," *data for the country as a whole must be supplemented with information about actual living conditions in the community in which each teacher is working.* How many families own what kinds of houses? What rents do families actually pay? What kinds of housing can they get for these rentals? What are the community standards for privacy, recreation, sanitation, home beautification, and the rest? Are these standards really "standards," or are they simply common practices in a community which is doing its best to meet bad local conditions? A little girl in an elementary school in a Kansas town put her nose in the air as she passed a little Mexican boy on the playground.

"I should think you'd wash yourself once in a while," she said scornfully. "Water doesn't cost anything!"

The little Mexican slapped her face and ran away, not quickly enough to hide the tears. It turned out that his mother was sick in bed; but the real difficulty, he confided between sobs to the principal, was that well water had to be carried a block, used cold, and "wouldn't get soapy." The science teacher who showed him how to "break" hard water to wash his face and hands has a friend for life. The community council through which the teachers are working for an extension of the city water mains is making an even more effective approach to his problem through neighborhood sanitation.

The third inference is suggested by studies which show wide differences in standards of living within the same income brackets (*2, 3, 4*), differences indicated by the presence or absence of such items of family equipment as radios, cars, sewing machines, washing machines, bathtubs, and mechanical refrigerators. We assume from this that the needs or wants of individual families have led to decisions which in turn have led to purchases that are more or less indicative of family interests, habits, ideals, and purposes. This probably means that *housing problems can never really be understood unless they are seen in relation not only to actual living conditions but also to the values which families and individuals in families hold.*

The significance of these inferences for the teacher of housing is easily seen. Somehow she must know her students and her community well enough to stimulate thinking which is intelligent and constructive with respect to housing problems of real concern. At the same time she must constantly guard against the ever-present possibility of arousing dissatisfactions or intensifying feelings of fear, resentment, shame, or guilt in relation to their homes with which children or adults may already be struggling. She must use material which is not too general for specific application in family situations or too personal to be suitable for group discussions. She must help her pupils to see the connection between certain kinds of housing and some of the social and economic problems they are beginning to recognize in their communities. She must, above all, be careful not to project her own ideas about "good" and "bad" houses on communities and on families which have worked out their own ways of meeting persistent needs.

There is a great deal of evidence to show that teachers are becoming increasingly

aware of this danger and making splendid efforts to avoid it. One day, not long ago, a boy in a southern rural school made a drawing of the interior of his house.

"Isn't there something wrong there?" his teacher asked when he showed it to her. "You have a bed in the kitchen."

The child looked at the paper in his hand for fully a minute before he finally said, as he turned away, "No, ma'am, that's not wrong. *My* bed's in *our* kitchen."

"I could have wept," his teacher confided later to a friend. "That is one of the few homes I haven't visited. I could never have been so careless if I had known."

The problems which face the high school teacher of housing are probably more complex than those confronting us on any other educational level because the adolescent's need to establish himself with his contemporaries makes him extremely sensitive about his home and family. The heartache of the little deaf girl in Pauline Leader's book *And No Birds Sing* because her house had no hall, the absurd pretentiousness of *Seventeen* are sad, and funny, because they are so real. In her paper "Housing in Relation to Family and Community Welfare," Flora Thurston reported at the North Atlantic conference the results of informal studies made with high school students, out-of-school youth, and adults, showing how some people have felt about their houses. It may be that one of the best ways of finding out how to direct high school courses is to seek the co-operation of young college boys and girls still close enough to their teens to remember their past concerns, but far enough away from these preoccupations to be somewhat impersonal about them. Miss Thurston's college students were able to say, for example, that they had wanted "two parlors," "a house on a nice street," "a room of my own," "a place to raise heck in," without feeling either disloyal or disgraced. With this kind of general information about the notions and needs of adolescence secured from not-much-older brothers and sisters as well as from more formal research, plus a knowledge of her community gained from a reasonable number of friendly home visits, a high school teacher should be able to plan a course in housing which the children who work with her can really use.

Some specific recommendations for such a course were made by the committee on the teaching of housing at the secondary level:

> At the high school level the centre of this area (the house and its environment) consists of real life problems involving analysis of the needs of individual families, recognition of the facilities to meet these needs offered by specific houses in the community, and the knowledge of the cost of such housing in relation to the family budget. These central experiences should lead to a more sympathetic understanding and acceptance by students of the housing problems of their own families, to a willingness to cooperate in making the best use of them, and to the development of civic responsibility for improving existing housing for low-income families where acutely needed.

The material needed for such a course, as the committee goes on to suggest, is the sort of material that is best developed co-operatively by teachers and students working together to gather data from all available sources (*5*). Included would be:

1. A study of family and personal needs served by housing.
2. A study of actual local houses and housing facilities which meet these needs, including a study of the local costs and characteristics of housing available at various income levels.
3. A study of renting, buying, and building in relation to family needs and local costs.
4. A study of specific consumer problems involved in renting, buying, or building, including (a) the evaluation of house structure with reference to design, construction and workmanship, arrangement in relation to convenience, safety and sanitation; (b) the evaluation of architects' services; and (c) the evaluation of financing possibilities.
5. A study of social problems connected with housing.

6. A study of new types of housing, such as trailers, housing for seasonal labor, etc., in relation to the social problems which they are raising.
7. A study of various types of housing projects with special reference to government agencies interested in housing, and to the various types of federal and private aid available.

If our faith in the scientific method is sound, a generation brought up in this way, educationally speaking, should be able to think straight about housing. After all, the Sabbath was made for man, not man for the Sabbath. Surely some day understanding will free the resources of this still lovely earth for our use so that every man who wants one will have a home suited to his needs, within his means, and full of possibilities for gracious, wholesome living.

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TRAINING FOR HOUSEHOLD EMPLOYMENT

I. THE W.P.A. PROGRAM

FLORENCE KERR

Finding and keeping satisfactory household workers continues to be a major problem for housewives. Finding work, with satisfactory wages, hours, and living conditions, is equally difficult for the household worker.

Up to the present the wage-hour regulation of the Fair Labor Standards Act has not helped to solve this two-way problem. So far, Washington is the only state that has a maximum week for household workers, and it has no adequate provision for enforcing this requirement. However, the women of Washington know that there is such a law and are interested in seeing how it works out. Incidentally, an Employee League is preparing an amendment which it is hoped will bring about a better administration of the law. Another state, Montana, amended its constitution in 1936 to establish an 8-hour workday "in all industries and occupations except farming and stock raising."[1] While household employment is not specially mentioned in this blanket 8-hour workday, at least it is not in the exceptions.

For the housewife the problem has grown deeper because of the wage-hour regulation. When paid workers in the home are expected to be on the job from 60 to 105 hours a week, as compared with 40 hours in a factory, most girls who might otherwise go into household employment will take a factory job by preference. When the time off allowed the houseworker is generally one weekday after 2 p.m., Sunday after 3 p.m., evenings sometimes uncertain, and rarely any compensation for overtime, as compared with all evenings, all Sundays, scheduled Saturday hours, and pay for overtime for the factory worker, again the choice of occupation is obvious.

Desire for friends and companionship is still another thing that sends job-seeking girls to the factory instead of into the home. In a factory she meets other workers of her own age and station in life. She gets to know people. She makes friends. In a home, where she is more often than not the only paid worker, and except on her afternoons off seldom sees anyone but members of her employer's family and their guests, a girl has small opportunity to make acquaintances, much less friends.

Lack of privacy, lack of adequate bathing facilities, and lack of a suitable place in which to receive callers are serious objections that too often have to be raised by employees who are asked to live in the homes in which they work. These are conditions that employers themselves must remedy.

However, if household employment is ever put on a dignified basis, there must be available trained workers capable of performing jobs that command the respect of their employers.

Is there any way to solve this double problem of assuring desirable working and living conditions for the employee and satisfactory workers for the employer? I think the W.P.A. household workers' training program is a step toward the solution.

This W.P.A. program was established in February 1936, and at this time, June

[1] LEILA DOMAN. Legislation in the Field of Household Employment. JOURNAL OF HOME ECONOMICS, Vol. 31 (Feb. 1939), p. 91.

1940, is in operation in 20 states and the District of Columbia. There are in all about 65 units, or training centers, 15 of which are for white trainees only; 20 for colored; and 30 for both white and colored, with young white women outnumbering the colored. The projects are supervised by trained home economists. Altogether about 90 of approximately 900 trained home economists employed by the W.P.A. are attached exclusively to household workers' training projects throughout the country.

Enrollment in W.P.A. training centers is open to women referred by the United States Employment Service or some other public agency, and selection is on the basis of personal qualifications and aptitude for the work. Trainees between the ages of 17 and 35 are preferred.

Trainees are not usually economic heads of families but women who are free to live in the home of a prospective employer if the job calls for "living in." Women certified for W.P.A. employment who are breadwinners for their families but whose home responsibilities permit their acceptance of household employment may be enrolled as trainees. At the time of enrollment each trainee must agree to accept household employment at the completion of her course, provided an offer is made that is reasonable from the standpoint of wages and working conditions.

These W.P.A. training projects have a double objective: to instruct, train, and fit workers for household employment, and to bring employers to a realization of their own duties toward household workers and a willingness to perform these duties. Assistance in the development of the projects is given by advisory committees made up of representatives of local women's organizations and leaders in the community.

Selection of quarters for this type of project is most important. Training of household workers can be successful only when it is given under conditions which approximate those of homes where workers may later be employed. That trainees may be able to use modern equipment, to care for the types of furnishings found in the well-ordered home, and to cook and serve meals which meet with the families' requirements in such homes, they must be made familiar with the standards prevailing at this economic level. Every effort is made to find large houses where work can be so arranged as to train enrollees on an individual basis. It is particularly important that training centers have ample kitchen space with a number of individual work units.

Equipment, furniture, and furnishings of a training center are almost as important as the house itself. Occasionally a building completely equipped and furnished for housekeeping can be rented. In many instances local utility companies and merchants co-operate by supplying modern equipment and certain furnishings, such as table appointments. W.P.A. furniture projects often contribute furniture. Craft projects have supplied hooked rugs, block-printed draperies, table linens. Art projects have provided etchings and paintings.

Every item of furniture, furnishings, and equipment is cared for by the enrollees as part of their training.

Training lasts twelve weeks and is as thorough as possible for the time covered. Routine household work has first attention, but special duties are not overlooked. Many projects include elementary training in child care. If possible, trainees spend some time in the local W.P.A. nursery school, where they learn to bathe, feed, and amuse small children. They also have instruction in seasonal cleaning, such as floor-waxing, washing and stretching lace curtains, care of Venetian blinds. All trainees are instructed in the use of the telephone, taking down messages, answering the doorbell. In brief, every-

thing that pertains to systematic housekeeping in comfortable homes has consideration in these courses.

The lunches served to the trainees every day provide opportunities for practical training in cooking and table service. Three or more separate meals are prepared at one time, each by an individual trainee, and served by her to a group of from two to four of her classmates. Each trainee assigned to the preparation of a meal works independently and sees the whole job through from start to finish—she does the cooking, sets the table, serves, washes the dishes, and puts the kitchen in order.

Since part of the objective of the project is to improve conditions of household employment through education of employers and prospective employers, representative groups and individuals are occasionally entertained at lunch at the training centers so that they will become better acquainted with the work of the project. The work of preparing and serving these guest meals is a planned part of the training program.

In many states local advisory committees establish the W.P.A. training centers, furnish the house, and assume the operating expenses. The bedrooms are rented to house guests, carefully selected by members of the advisory committee. Usually these paying guests are business and professional women. Their presence, in addition to helping to meet overhead costs, provides a real and natural work situation for the enrollees. Making up beds that have been slept in, putting used dressing tables in order, cleaning and setting to rights a used room, and making it ready for the return of its occupant cannot fail to be effective training.

In December 1939 a survey of this W.P.A. project showed that in the 34 months of its operation 22,000 women had received training under the program and that 18,000 trainees had been placed. That 4,000 had not been placed needs the explanation that most of them left the schools before finishing the course. Some stayed only a few days. Others were found unfitted physically or mentally for the work and had to be dismissed. Some found other employment before finishing the course; some got married; some left the community. For all young women who take the full three-month course and receive their certificates, placement is now almost 100 per cent.

No recent survey has been made to show the wages paid W.P.A. trainees. However, in the last half of 1937 a study of 604 placements of women trained on W.P.A. projects in 17 states showed that the median cash wage received by them in private employment was $8.53 a week. Of the 604 women placed, 537 of them had been given certificates of efficiency; the others were placed in private jobs before the completion of their courses. The median for certificated persons, $8.79, was considerably higher than that for noncertificated persons, $5.61.

In operating the projects, W.P.A. supervisors endeavor to maintain a close relationship with the State Employment Service. Arrangements are often made for representatives of the Employment Service to visit the training center regularly and to become personally acquainted with the trainees in order to place them more satisfactorily.

Educational work among employers is done, for the most part, by advisory committees, in states where such committees function. To be most effective, these advisory committees are organized in subcommittees to include those on housing, equipment and furnishing, publicity (newspaper, radio), recruiting trainees, and standards for household employment. Members of the committees are encouraged to visit training centers, study their operation, and be free in their criticism concerning such details as how trainees

answer the door and the telephone, how they serve, and their general demeanor.

Committees and their individual members do a great deal toward interesting the right kind of employers. If employers can be made to feel that they are part of the experiment in meeting the big problem of household employment, they are much more likely to give their employees guidance, patient supervision, and understanding treatment.

II. IN CANADA

ISABELLE ALEXANDER

The Dominion-Provincial Youth Training Program was initiated in 1937 following recommendations of the National Employment Commission. As the name implies, costs of the program are borne jointly and projects are planned by the provinces subject to the final approval of the Dominion.

The program has two main objectives: to train urban youth for wage-earning employment, and to give rural youth training to raise the standard of rural life. The establishment of 18 Home Service Training Schools where training for household employment is given has been the best project for women from the point of view of placement, since every satisfactory graduate is assured of employment.

Realizing the customary resentment felt toward household employment as a vocation, the schools try to raise the status of household employment, as well as to train unskilled girls and place them in employment.

The project had public support since some training for household employment had been given by private agencies prior to the establishment of the youth training plan. This voluntary interest was transferred to the governmental plan and extended through the appointment of advisory committees of local women at each school. These committees assist with the selection of trainees, interpret the work to the community, and advise as to the adequacy of training courses and equipment. Final authority for the schools rests with the officers of the provincial departments of education and labor.

During the past fiscal year, 1,614 young women were trained in the 18 schools operated under the plan. A total of 3,683 have been trained since October 1937.

Selection of trainees. According to the terms of the agreements under which the schools operate, training is available for all unemployed young women between the ages of 16 and 30 years without respect to race or creed.

Early experience soon proved that training would not make every unemployed young woman into a satisfactory houseworker. Careful selection of trainees is essential if graduates of the schools are to maintain a standard of service acceptable to employers.

Preference is given to urban young women; and provided they come under the classification covered by the agreement, the following qualifications are sought: an interest in the training and intention to accept a position in housework, promising capabilities, maturity, and a reasonable academic standing.

A medical examination is required before trainees can be admitted to the school. Employers have been especially pleased with this regulation.

Training is begun on the understanding that the trainee is on probation for two weeks. Those who do not show a satisfactory interest in that time are discharged. In spite of careful selection, from six to seven per cent leave at the end of the probation period. Another three or four per cent leave for medical reasons.

Between 30 and 40 per cent of the trainees come from homes on public relief.

Housing of schools. The majority of the schools are located in large residences

and provide dormitory accommodation for the trainees. Wherever possible, school laboratories are used for special instruction in foods.

The residential type of school has been found most helpful for the following reasons: The problem of maintenance during training is eliminated; as long as the school does not become so large that it takes on the character of an institution, the housekeeping provides problems similar to those in a home; the trainees are away from home influences which might prejudice them against the type of work they are to undertake; they are under a helpful type of discipline; underweight and nervous trainees usually react to the regular hours and wholesome food of the schools by gaining weight and developing confidence. Trainees in the residential schools receive three months of training.

In centers where the school cannot be entirely residential, high school laboratories and practice houses are used with good results. In the province of British Columbia, where the training period is six months, two of the classes are held in well-equipped food laboratories, supplemented by training in practice houses. Each girl lives in the house for several weeks and for two weeks of that time performs the same duties which she will have to do in an employer's home—the matron and three other trainees providing the family unit. The practice house is as much as possible like an ordinary home.

One of the difficulties encountered by the first graduates was that of co-ordinating their work when on the job. This has been overcome to a considerable extent by installing a unit kitchen in the school. During the latter part of her training each girl assumes the responsibility of preparing and serving three meals a day for a family-size group, the cleaning of several rooms, some laundry work, and answering the door and telephone.

Training in homes under hostesses was used to supplement the formal instruction during the first year or two. Owing to the difficulty of securing hostesses, this method has been discontinued at all but one school.

Assistance given to the trainees during their period of training at most of the centers includes two uniforms, cap and apron, cookbook, a small weekly allowance for pocket money, and a medical examination, as well as full or partial maintenance.

Staff. Excluding placement officers, schools have one teacher for each 8 to 12 trainees. At least one teacher must be a home economics graduate. Twenty-four of the forty teachers at the Home Service Training Schools have home economics training. Eight placement officers spend all or part of their time on placement and follow-up work for the schools.

Curricula. Most of the trainees are quite inexperienced when they begin the admittedly short period of training. What is attempted, and to a large extent accomplished, is to develop in the trainees the right attitude toward work and a respect for the work they are to do, to teach them the basic skills connected with housework, and to cultivate orderly working habits. Courses of instruction cover mainly: preparation and serving of meals; daily and weekly cleaning routine for homes; laundry work; answering door and telephone calls; and mending.

Trainees are admitted each month, thus making it possible to have a steady supply for placement. Most schools operate continuously throughout the year.

Placement and follow-up. The demand for trained workers far exceeds the supply. Placement problems, therefore, are those which involve selecting the right place for the right girl. After three months of satisfactory employment, a trainee is given a certificate of training. The employer's recommendation plus the girl's record at

the training school are used in judging the eligibility for a certificate.

No minimum wage has been definitely established for graduates of Home Service Training Schools, though an effort is made to secure a wage which will be good compared with the average for the community in which the school is located. There is no doubt that the training increases the earning ability of every trainee.

At a number of the schools a specially appointed placement officer visits each employer several weeks after the employee begins her work. She interviews both the employer and the employee. Many difficulties which might develop into problems are overcome in this way, and satisfactory living conditions for the trainee are assured.

Costs. Residential schools, where full maintenance is provided for the trainees, have proved to be very little more expensive than the partially residential type. Cost per trainee (including those admitted but not finishing) has been less than one hundred dollars. For persons placed after completion of course the cost has been about $140 per person.

Results. The Home Service Training Schools have not yet made household employment a "desired vocation." They have made a beginning toward that end. Probably 50 per cent of the trainees would not have undertaken housework without the training. Former factory and office workers have been trained and, once the nostalgia for the old job has been overcome, have found satisfaction in housework. Young women who had been earning less than subsistence wages at housework have, after training, found jobs which pay wages equivalent to those of clerical workers and waitresses.

The turnover so characteristic of household employment has not been eliminated and makes it difficult to secure accurate follow-up reports of all school graduates. In one province, a recent survey showed 84 per cent of the graduates working. In one school only 9 out of 107 graduates are unemployable.

Probably the best indication of results is to be found in the waiting list of employers and in the fact that it is becoming increasingly easy to secure a satisfactory type of trainee.

RESEARCH TO INCREASE THE USE OF COTTON—A SYMPOSIUM

Every newspaper reader knows that cotton is a crop whose unmarketable surplus is seriously upsetting the economy of the cotton-growing states and hence of the country at large. He also knows that the best chance of relieving the situation is by using more cotton at home. "Cotton weeks" and other publicity devices are attempts to "sell the idea," and campaigns for wearing cotton dresses and making cotton mattresses carry it a bit further, but not far enough. Most of us have long since accepted the theory that to find the exact facts is usually the first step toward the final solution of a problem; and when Congress faced the problem of cotton and other agricultural surpluses, it decided to apply that theory. It made appropriations to existing research bureaus for special investigations into the utilization of surplus crops, and it also established regional laboratories to study yet more intensively the question of finding outlets for the important surpluses of each region.

The Bureau of Home Economics in the U. S. Department of Agriculture and the new Southern Regional Laboratory at New Orleans are now both empowered to do research on cotton utilization. Household uses of cotton are definitely up the home economics alley, and the Journal is glad to give its readers a picture of developments up to the present. Miss O'Brien's account of the work in the Bureau of Home Economics is supplemented by the technical report of the work with cotton hosiery which Miss Hays, Miss Petersen, and Miss Taylor describe on page 467. Slightly longer versions of the papers by Mr. Cheatham and Dr. Scott were originally read before home economists at the Birmingham meeting of the Southern Agricultural Workers Association last February.

COTTON FABRIC RESEARCH IN THE BUREAU OF HOME ECONOMICS

RUTH O'BRIEN

Home economics has long been associated with agriculture in the land-grant colleges—in the early days administratively, more recently by continued ties of interest and co-operation, both in extension and resident work. When a Bureau of Home Economics was added to the federal service, it was thus not surprising that it was placed in the Department of Agriculture and that one of the clauses in the enabling act under which it operates specifies that the Bureau shall conduct research and disseminate information which will make for a more effective utilization of American-produced agricultural products in the homes of the country. This in terms of textiles, of course, means chiefly cotton and wool.

The Bureau, therefore, since the establishment of the division of textiles and clothing in 1924, has emphasized research on these fibers, keeping in mind the relationship of such study to a well-balanced home economics research program on selection, use, and care of household and clothing textiles. The unique opportunity for co-operative studies within the Department of Agriculture has also not been overlooked. Since its start, the Department has studied cotton growing and marketing. The organization of a bureau for research on the consumer side completed the chain from raw fiber to finished fabric. This opened the way for investigating relationships between the value of fabrics in use and the qualities of the fibers from which they are made.

Consumer problems in buying cottons. No product can be effectively utilized on a national scale without merchandising practices which enable buyers to choose qualities best suited to their needs and pocketbooks. Equally important are consumers educated to use the goods to the best advantage. In many cases, available information of this kind is withheld in over-the-counter selling. In countless other instances, the information does not exist and can be obtained only by systematic research. The lack of buying agencies equipped to analyze fabrics or conduct serviceability and other needed studies has retarded the accumulation of such factual data on textiles. This has tended to block efforts of national organizations to set up specifications for consumer use and has hindered the introduction of informative labels on household textiles and clothing on the retail counter.

With this in mind, the Bureau therefore pioneered, to the extent of its limited resources, in accumulating and publishing data of this kind on cotton as well as wool materials. For example, the first proposal for minimum specifications for various classes of upholstery fabrics was published as the result of such work (*1*). Two grades each of three types—friezes, rib weaves, and damasks—were set up. The specifications based on the physical analysis of 36 all-cotton materials and 26 other fabrics containing at least 50 per cent of cotton cover the weight per square yard and the breaking strength of the fabric before and after it has been abraded 10,000 times under specified conditions. For the frieze, requirements for the number of tufts per square inch and the weight of pile per square yard were also included. Twenty-four additional all-cotton tapestries have since been purchased and analyzed. From these data, specifications for two grades of upholstery tapestries will be formulated.

Considerable work was also done on the colorfastness of the fabrics to light. Many of them showed little or no change in color after 20 hours of exposure, but by the end of 80 hours the color in most of the fabrics was unsatisfactory. This indicates that it is very difficult at present for a consumer to find a cotton upholstery fabric that will hold its color satisfactorily. More attention should be given to fast dyestuffs on materials of this kind if they are to merit consumer approval.

Wherever possible, service tests parallel the laboratory work. Examples are the studies on towels which have been published (*2*, *3*, *4*) and those on curtains now under way. In the latter an analysis of cotton marquisettes for curtains has been supplemented by a study of their reaction to light and to laundering under actual use conditions. Forty-two, including 36 all-cotton pieces and 6 cotton-rayon mixtures, were purchased and analyzed. Experimental curtains were made and hung at windows on an eastern exposure. After each two months of wear the curtains were laundered and rehung. Duplicate samples were withdrawn after two, four, and six washings, and their physical deterioration determined by changes in weight per square yard, yarn count, and breaking strength. Chemical deterioration was studied by changes of fluidity of the cotton when dispersed in cuprammonium hydroxide. Proposed specifications for this type of fabric will be prepared as soon as the testing is completed and the data are analyzed.

Fifty-one samples of cotton broadcloth, a popular fabric for men's shirts, were analyzed for the purpose of determining a possible classification and set of specifications for consumer use in purchasing such material (*5*). The proposed specifications for both single and ply fabrics include yarn count, weight per square yard, breaking strength (strip and grab methods), and loss in weight on desizing. Those for single broadcloth were published last year as proposed tentative standards by the American Society for Testing Materials (*6*),

and the complete specification is now being considered by that organization. In addition to these determinations, the fabrics were tested for yarn number, twist, thickness, bursting strength, amount of shrinkage, and resistance to abrasion. Efforts are still under way to work out methods of determining and testing the degree of mercerization of such materials, since this is a property important to consumers. The problem has been attacked as a cooperative effort with Subcommittee A-6 of Committee D-13 of the American Society for Testing Materials.

Service tests on household textiles made under controlled conditions from different varieties and staple lengths of cotton evaluate the raw fibers in terms of fabric durability. Sheeting has frequently been employed by the Bureau for such studies because large numbers can readily be subjected to uniform wear and laundering (*7*, *8*).

Cotton in consumer use. Another recent publication illustrated a different phase of the Bureau's work on cotton (*9*). In connection with studies on the use and care of fabrics, it was recognized that the yearly loss resulting from their deterioration by microorganisms is considerable. Much damage now ascribed to other causes results from the unrecognized action of fungi and bacteria. The ones that affect cotton may be divided roughly into two groups: those that merely discolor the fibers and those that actively attack the cellulose with or without an accompanying discoloration. Cotton is subject to such damage from the time the cotton boll opens, through the various stages of manufacture and use, until the fiber is finally decomposed.

Previous studies showed that the fungus *Chaetomium globosum* produces a very considerable loss in breaking strength of cellulosic fabrics. However, little is known concerning the various physical and chemical changes accompanying this. Also, the bacterium *Spirochaeta cytophaga* had been found to be very active in decomposing cellulose and to grow well under the conditions maintained in the study of the chaetomium. Since the manner of growth and the action of fungi and bacteria are usually quite different, both the chaetomium and the spirochete were studied at the Bureau. The action of these organisms on bleached cotton duck was determined by measuring changes in breaking strength, weight per square yard, thickness, staple length, fluidity in cuprammonium hydroxide, copper number, methylene blue absorption, moisture, and ash. Both the organisms consume oxygen and produce carbon dioxide as they grow. Therefore, the rate of evolution of carbon dioxide was measured in order to estimate the rate of growth. In this connection, a previously published method for this determination was modified in such a way as to make it applicable to fabrics.

Numerous requests come to the Bureau of Home Economics for information on how to prevent mildew and remove the stains it leaves on cotton fabrics. With the hope of being able to give more definite and useful information in replies to these inquiries, a study was undertaken last year to determine what temperatures and humidities bring about the most rapid growth of ten of the molds commonly found on cotton. The effects of the growth of these molds were tested physically by measuring breaking strength of the fabrics and changes in thickness and weight. Chemically the growth of the organisms was determined by measuring the amount of catalase that was produced.

In an effort to discover satisfactory processes for making fabrics mildew resistant, the Bureau has tried approximately 135 different chemical treatments. These have been applied to desized cotton duck, and their effectiveness as mildew-resistant finishes has been determined by testing the breaking strength of treated fabrics after they have been inoculated with *Chaetomium*

globosum and incubated for two weeks under conditions favoring mildew development. Then by comparison with similar unexposed control samples, the loss in breaking strength due to mildew growth can be obtained. So far several treatments have been found which give complete protection to the fabric. This summer and fall the study is being extended to test the resistance of these finishing treatments to weathering. Treated fabrics are being exposed to sun, wind, and rain for periods of three and six months. Other samples are being stored for similar periods of time, and some will be laundered in order to determine the effects of all these factors.

Cotton hose. Members of Congress recently raised the question of the possible use of some of America's surplus cotton in women's hosiery and appropriated funds for the Bureau of Home Economics to try to find the answer. The Bureau, therefore, tackled the problem and originated 72 designs for various uses, ranging from plain knit constructions for sport and utility wear to novelties in mesh and lace for afternoon and evening. A booklet for manufacturers showing these has stimulated interest among the mills, and today women's full-fashioned lisle stockings for various uses can be purchased more widely throughout the country than before the Bureau started its work (*10*).

White cotton hose for nurses and others wearing white uniforms have also been developed. A serviceability study at one of the Washington hospitals in which 68 nurses participated has given data on the durability of some of these hose. This work has been tied into the Department's research program by using the hose as a means of testing out the serviceability in consumer use of some of the raw cottons in which the Department is interested. Four varieties of cotton have been spun into hosiery yarn and are being put into hose which will be subjected to service tests. A report on the economic aspects of cotton in hosiery manufacturing and a number of articles have been published (*11, 12, 13*).

Since the application of chemical finishes offers promising possibilities for improving cotton hose, some of the constructions were treated with various finishes and the performance of these hose compared with that of similar untreated ones. Particular attention was given to their elasticity, bursting strength, weight, and water repellency (*14, 15*). A stocking must have a high recoverable elasticity if it is not to become baggy in use. Bursting strength increases in importance with more sheer construction. Hose that have been rendered water repellent would be expected to withstand splashing with rain and muddy water.

Clothing and health. The effect of clothing on comfort and health has long been the subject of much conjecture and speculation but of little experimental study. The Bureau recently employed a physiologist and an assistant to explore the research possibilities in this field. Two problems are now being investigated. One is a comparison of the effects of cotton and silk hose on skin physiology. This involves two series of experiments, both of which are being carried on under controlled temperature and humidity conditions.

In one series, the subject, normally dressed except for no hose and shoes, lies quietly on a cot. The heat radiated, the skin temperature, and the amount of "insensible" perspiration are measured at different points on the legs and feet. At the end of the 100-minute control period, a cotton hose is placed on one leg and silk on the other, and the measurements are repeated for another 100-minute period. In a second series, the same procedure is followed, except that the subject rides a stationary bicycle ten minutes before readings are taken on the bare skin, and rides again after the hose are put on.

The data obtained to date on five subjects show that the cotton hose are slightly warmer than the silk as measured by the

skin temperature. This effect is more marked after exercise than when the subject is quiet. Further research is necessary to determine whether the subject is able to differentiate these small differences and whether these differences play a significant role in the conservation of heat.

A second phase of this work on clothing and health deals with the treatment of "athlete's foot" by the use of chemically impregnated cotton hose. The co-operation has been secured of a group of student nurses in a Washington hospital who have mild cases of this disease. During the past year, they wore hose treated by the Bureau with solutions containing copper sulfate. The doctor's report indicates that the disease has been held in check and probably improved. This study is still under way with a group of nurses having moderate and marked cases of the disease.

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DOMESTIC UTILIZATION OF COTTON IN RELATION TO ECONOMIC CONDITIONS IN THE SOUTH

R. J. CHEATHAM

A close relationship exists between the utilization of cotton in this country and economic conditions in the South. Cotton is on a kind of battle front. The quantities of cotton going into the hundreds of different domestic uses are constantly changing, as are the uses themselves. Changes in clothing styles and technical developments

within industry contribute largely to this shifting. Up to about 1930, cotton consumption in the United States was in a generally expansive period, so that a decrease of consumption in some channels was at least offset by increase in others. For example, the decreased use of cotton in women's hosiery from 1920 to 1930 was more than offset by its large increase in automobile tires. But whereas many of these changes prior to 1930 represented merely a shifting from one type of cotton product to another, especially in clothing and household uses, in recent years an increasing number have been caused by direct substitution of other textiles and materials for cotton. Jute and paper mainly in industrial uses and rayon mainly in clothing and household uses have made measurable inroads on the consumption of cotton.

Take, for example, the use of cotton by the cement industry. From 1900 to 1925, nearly 90 per cent of all cement shipments were made in cotton bags; but since 1930 less than 40 per cent were in cotton bags, while more than 40 per cent were in paper bags and the remainder were shipped in bulk. The development of a paper material suitable for this purpose was an outstanding technological accomplishment, but the cotton grower can derive little satisfaction from knowing this. But perhaps it raises the question: Cannot technological research be applied in the same way to the advantage of cotton? But before we discuss that, let us see what has been happening to cotton in clothing and household uses.

Statistics illustrating the displacement of cotton in the clothing and household fields are difficult to obtain and liable to conflicting interpretations. However, we can learn something from personal knowledge. Among many articles now made mainly from synthetic fibers, which ten or twelve years ago were made mostly or wholly from cotton, we can list men's socks, bedspreads, window curtains, ladies' underwear, slips, and certain types of dresses. There is no doubt that cotton has lost much of its market for clothing and household uses.

This should not be interpreted as condemnation of the materials which compete with cotton. The fact that we buy them with our own money is evidence that we prefer them for certain uses, and freedom to spend what money we may have in the way we please is something none of us will willingly give up. By far and away the greater part of the uses for cotton appear to be in no danger at all from competing products for many years to come. At the same time, there are many small uses, and some not so small, which have already been lost and many others which are in danger of being lost. Although individually these uses may be comparatively small, in the aggregate they assume considerable importance, and it is worth our every effort to maintain and extend the use of cotton.

Cotton, directly and indirectly, provides a livelihood to more people than any other plant crop. About 12,000,000 people in the United States derive their principal support from the growing, ginning, handling, and manufacturing of cotton. It is the major crop on 1,500,000 farms, and of all the plant crops it is the greatest source of cash farm income. And in its manufacture, approximately 400,000 people are ordinarily employed in the 1,200 cotton textile mills of this country, most of them in the South.

These important facts show only part of the picture. Cotton is grown, picked, ginned, sold, and manufactured because there is a demand for the finished goods into which it goes. If we want to sell as much cotton as is produced, at favorable prices, there must be a demand for an equivalent quantity of manufactured cotton goods at prices which permit manufacturers to pay favorable prices for the raw material. Of course the price of raw cotton can fluctuate considerably without appreciably affecting the price of many types of finished cotton articles—men's shirts, for example—where

the price of the raw cotton represents only a small proportion of the cost of the finished article; but in many large uses, such as bags, where the price of the raw cotton represents nearly half the cost of the finished bags, a difference of a few cents may mean a difference in sales of several million bags. Whether we have good prices or poor prices, whether we can sell large crops or only small crops, depends in final analysis on conditions of cotton utilization. This is obvious, but is sometimes lost sight of.

Owing largely to increased production of foreign cottons and to the domestic policies of totalitarian countries that encourage the use of synthetic fibers, there is little likelihood of our regaining such large foreign markets as this country was accustomed to during the 1920's. As a consequence, the domestic market has become of increasing importance to cotton growers of the United States, and if production is to be maintained at anywhere near the levels of the 1920's, or even those of the past five or six years, increased outlets must be found in domestic markets.

The increased utilization of cotton cannot be brought about by wishful thinking. It can be done only by positive and intensive efforts directed specifically toward that end; that is, by conducting research and investigations aimed specifically at increasing the consumption of cotton. In my opinion it can be accomplished by this means.

Cotton utilization in the United States is a tremendously complex subject. There are literally hundreds of separate and distinct uses, and the quantities of cotton going into each are affected by a multitude of different factors. Nevertheless, the uses of cotton can be grouped into a few divisions with several common characteristics.

For example, about 40 per cent of the cotton consumed in this country goes into what we call "industrial" uses, such as automobile tire fabrics, bags, twine and cordage, belting. In most industrial uses, one matter of prime importance is the durability of a fabric under moderate to severe treatment. Another is the relation of its price to that of competing materials. On the whole, cotton meets both of these requirements admirably; but within recent years jute and paper, especially paper, have been cutting steadily into many industrial uses once entirely served by cotton. In the case of various industrial uses, the principal advantage of paper and jute is their cheapness in relation to cotton.

We have one or two instances of higher priced fibers competing with cotton in an industrial use. For example, some rayon is now being used in the manufacture of automobile tires—an example which in turn provides a concrete example of what technological and scientific research can accomplish in the way of aiding cotton with its competitors. Modern cord tire fabric is a true product of research. With huge trucks lumbering over the country at 50 miles an hour on mammoth tires containing nearly a bale of cotton in the form of fabric, and with these tires performing in a manner which no one ever dreamed of, it seemed little could be desired in the way of further improvement. But suddenly there appeared the fruits of intensive research on another type of fiber—rayon. In 1937, a truck tire with cord fabric made from rayon instead of cotton was placed on the market. Though more expensive, this rayon-cord tire was reported to be more durable than existing cotton-cord tires under extra heavy loads in sustained high speed service. About a year later, rayon-cord tires designed for extra-quality passenger cars appeared.

This looked like a trend of great danger to cotton, for about 8 per cent of all the domestically consumed cotton goes into tire fabrics. But manufacturers of cotton-cord fabric got busy, and the results of their efforts are distinctly encouraging to producers and processors of cotton. A little over a year ago a new type of cotton-

cord fabric—the result of research—was placed on the market, and its makers claim that it surpasses any other type in performance. The extent to which rayon may finally replace cotton in this field is still highly uncertain, but these recent improvements in the design of cotton tire cords have undoubtedly narrowed the field potentially open to rayon and definitely prove that research can be effective in maintaining the consumption of cotton.

In clothing and household fabrics, which represent, respectively, about 40 and 20 per cent of our domestic consumption, the factors of competition are somewhat different. In many of these fabrics, appearance, along with a certain minimum of durability, is the chief competitive factor. During the last few years there has been a gradually increasing substitution of rayon for cotton in certain clothing and household fabrics. This is due principally to a greater sales appeal possessed by these rayon fabrics, for in many instances the displaced cotton fabrics were cheaper and more durable.

The fact that fabrics made from synthetic fibers depend largely on new chemical processes for their style and sales appeal points the way to the type of research mainly needed on cotton to maintain and extend its use in clothing and household fabrics, and the other contributors to this symposium will tell of such research.

From what has been said, it is evident that the cotton industry is a tremendous factor in the economy of the South; that our domestic market is of increasing importance in this economy; that, in final analysis, conditions obtaining in the field of cotton utilization are what determine how much of our crop can be sold at favorable prices; and that, if production of cotton in the United States is to be maintained, increased outlets must be found in domestic markets. At the same time, it is evident that the period of natural expansion in our cotton consumption has ended and that cotton utilization can be increased only by positive efforts, by research and investigations directed specifically toward that end. Further, the time has come when intensive work of this nature must be done, and without delay, if domestic markets for American cotton are to be expanded or even maintained.

The federal government has not been blind to facts such as these. Congress had data of this sort in mind when it appropriated money for the construction and operation of four regional research laboratories charged with the task of finding new and wider outlets and markets for surplus farm commodities, and when it made a special appropriation to the Bureau of Home Economics for research that may lead to greater utilization of cotton in consumer goods (see page 443).

The laboratory which is intended for the southern region, now under construction in New Orleans, Louisiana, will work on cotton, peanuts, and sweet potatoes, but will give major attention to cotton. The research on cotton lint will be concerned with problems such as I have just outlined and will be organized under three separate divisions: the Division of Fundamental Cotton Fiber Investigations, the Cotton Processing Division, and the Cotton Chemical Finishing Division. There will also be research on the utilization of cottonseed and its various by-products.

Research on the chemical and physical structure of cotton fiber and on those inherent properties which govern the utility of cotton will be conducted in the Division of Fundamental Cotton Fiber Investigations. The function of fundamental research of this kind is to supply a steady stream of scientific facts on which applied research may be based. The research on chemical finishes for cotton fabrics will be conducted in the Cotton Chemical Finishing Division, described on page 453. In the Cotton Processing Division, the primary emphasis will be placed on finding new

and extended industrial uses for cotton, although some work will also be done on clothing and household fabrics. This is the division with which I shall be associated, and I wish to describe briefly what our aims are and by what means we hope to accomplish them.

The work of the Cotton Processing Division will be organized into three separate but closely co-operating sections:

1. The Survey and Appraisal Section. This will collect, analyze, and interpret technical and economic data needed in connection with the choice and conduct of the research of the other two sections.

2. The Fabric Development Section. This will work to develop new and improved cotton yarn and fabrics for specific purposes. Economic and technological surveys or suggestions from various sources will focus attention on some specific potential use, e.g., cotton for bagging or a fabric to prevent soil erosion on highways. Studies will be made of physical properties and costs required for the specific purpose, and the technical knowledge of the research staff will be applied to producing a cotton fabric to meet these requirements. The properties and cost of a product currently used will be studied only for purposes of comparison. This is significant because the cheapest fiber does not always make the most satisfactory product. For example, jute sells for about half as much as cotton, but a satisfactory cotton twine for tying mail has recently been found which, on a yardage basis, competes with jute in price.

3. A section for the development of new and improved cotton processing machinery and methods of manufacture, with the purpose of lowering manufacturing costs and improving the quality of cotton products.

The research in all the sections of the Southern Regional Research Laboratory will form part of a comprehensive, closely knit program of scientific, technological, and economic research carried on with the specific aim of finding new and wider uses for cotton. Such a program is long overdue. The federal government has never before gone into research on cotton and its by-products in such a thorough and aggressive manner. The money appropriated by Congress will provide for personnel, equipment, and other expenses commensurate with the importance and urgency of the problem. But it is up to us —all of us—to make the program pay. We know the problems confronting the cotton industry of the United States; we know the opportunities afforded by research; and we know how important it is that we bend every effort toward increasing the utilization of American cotton.

THE IMPORTANCE OF CHEMICAL FINISHING IN INCREASING THE CONSUMPTION OF COTTON TEXTILES

WALTER M. SCOTT

The paper by Mr. Cheatham emphasized, among other things, the importance of chemical finishes in maintaining and extending the use of cotton in clothing and household fabrics. Statistics show that about 60 per cent of our domestic consumption of cotton is accounted for by these two types of fabrics, so that significant increases or decreases in the amount of cotton thus used would have a marked effect on the total consumption of cotton.

The chief factor in the choice of fabrics for personal or household use is attractiveness or sales appeal, although increasing emphasis has recently been placed on durability. The great majority of women are attracted to a certain piece of cloth first by its looks and second by its feel. They may inquire about its washability or general serviceability but though told that there is no guarantee as to these qualities, they often select it because its style appeals to them.

This is the principal reason why cotton has been gradually replaced by rayon in certain clothing and household fabrics. Rayon fabrics are made from chemical fibers, and the producers who are chemically minded have altered their processes to obtain fibers and fabrics which conform to popular demand. For example, when rayon goods were first produced they had a

high luster objectionable to most consumers. After some years of research, the manufacturers eliminated this by incorporating a finely divided white pigment in the spinning solution so that the resultant yarn was less lustrous, whiter, and much more attractive in appearance.

On a recent visit to one of the larger textile mills in the South, I was told that this mill used to produce about 4,000,000 yards a week of white cotton nainsook which was largely used for infants' clothing and ladies' underwear. At present its production of this type of goods has dropped to about 15 per cent of the former output—a decline attributed chiefly to competition by rayon, although somewhat to the importation of cheap Japanese cotton cloth.

Cotton is a natural, not a synthetic, fiber, and for many years there was hesitancy about changing its natural appearance. However, there seems now no reason why the modern cotton textile manufacturer should not use chemicals to enhance the beauty and usefulness of his natural raw material. In fact, a few of the larger cotton manufacturers have established chemical research departments with a view to opening up new and regaining lost markets for cotton. However, very few mills are financially able to support a continuing research program, and the industry as a whole is so diversified and so highly competitive that a co-operative research effort among cotton manufacturers appears almost impossible.

Furthermore, some of them are discouraged by the results of their own research. Several have spent considerable time and money in developing admittedly superior new types of finishes for certain fabrics. But these cost a little more to produce and hence the resultant fabrics must be sold at a slightly higher price, which the wholesalers or the garment manufacturers refuse to pay for the better finish because they did not think they could pass this increase in price on to the ultimate consumer. Hence, the manufacturers were unable to capitalize on the results of their research.

There is, however, a bright side to the picture. Research on cotton fabrics can be made to pay and the public can be educated to demand the improvements resulting from such research. A classic example of this is the case of preshrunk cotton fabrics. The idea is not new; in fact, I know cotton manufacturers who were preshrinking some of their fabrics at least 20 or 25 years ago, but many wholesalers refused to pay the extra price. However, a certain firm developed a special machine and a procedure by which the shrinkage in finishing could be accurately controlled so that cotton goods guaranteed to have practically no residual shrinkage could be placed on the market. This process was called "Sanforizing." This concern, in order to break down the sales resistance of the middleman, put on a campaign of national advertising directly to the consumer. The results were astonishing. Practically all of the goods for men's shirtings are now preshrunk, and even the relatively low-paid gas station attendants and garage mechanics demand Sanforized cotton overalls at 98 cents a pair in preference to ordinary overalls of the same material at 78 cents. In the face of such a demand, the wholesalers are willing to pay the higher prices required by the manufacturers, with the result that one mill which I recently visited was running 16 Sanforizing machines day and night, almost entirely on cloth intended for men's work clothing.

Besides shrinkage, there are several other desirable properties which chemical finishing processes can be expected to impart to or improve in cotton textiles, several of them already being investigated by the Bureau of Home Economics (see page 443).

One of the most important of these is luster. For many years mercerization has been practiced in the cotton industry to produce a moderate increase in the luster.

Still higher increases in luster have been obtained mechanically by "schreinerizing" or some other form of calendering, where the cotton cloth is subjected to high pressure between heated rolls. Glazed chintzes and high-luster sateen lining fabrics are produced in this manner, but the luster is not permanent and disappears entirely if the goods are washed. Recent studies have indicated that a permanent glazed chintz or other high-luster cotton goods can be produced by impregnating the fabric with one of the clear, colorless synthetic resins, such as have been utilized as a liner in safety glass. A small number of fabrics treated in this manner have already been placed on the market, but much research is required before the possibilities can be fully exploited.

Softness is another property demanded in some types of cotton fabrics, particularly for dress goods and underwear. Softness in the past has been imparted to cotton textiles by finishing them in a bath containing Turkey-red oil or a similar soluble oil; but this softness was only temporary, lost after the first washings. A new field of finishing research has lately been opened up by the discovery that certain organic compounds, described chemically as "cation-active," have the property of imparting to cotton a permanent softness which is not removed by many washings.

The opposite of softness, namely stiffness or crispness, is desired in other types of cotton fabrics, such as those for hospital uniforms or aprons. This property has customarily been imparted to cotton goods by starching, a method open to the objection that it has to be repeated after every washing. Recent preliminary experiments indicate that certain cellulose ethers and other synthetic thermoplastic materials can be utilized to impart any desired degree of stiffness to cotton fabrics and that this can be restored after each washing simply by pressing with a moderately hot iron. Further studies along this line are projected.

The ability to shed water has always been recognized as an essential for certain heavy cotton fabrics, such as duck or canvas for tents, tarpaulins, etc. Now more and more emphasis is laid on the desirability of a reasonable resistance to water in the cotton gabardines and jeans used for uniforms for gas station attendants and even for women's dress goods so that they will not be adversely affected by exposure to an unexpected shower. Resistance to wetting has generally been imparted to cotton goods by depositing in or on the surface of the fibers a metallic soap such as aluminum stearate or a film of wax, and the resultant finishes did not survive even a moderate amount of washing. Modern research has suggested ways of meeting this difficulty. One is to apply the wax in connection with a synthetic plastic which is compatible with it; the binding action of the plastic tends to hold the wax on the cotton through a number of washings. Another is to use certain new organic compounds which actually react with cotton to give it the ability to resist wetting throughout the life of the fabric.

Other properties which chemical finishing is capable of imparting to cotton textiles may be briefly mentioned. Draperies may be treated so that they are fire-resistant. Upholstery fabrics may be made spot-proof so that liquids spilled on them may be removed by wiping with a damp rag, just as in the case of oilcloth. Cotton duck and canvas may be treated so that they will not mildew, even when stored for a long time in a damp place. As the Bureau of Home Economics is attempting to determine (see page 443), it may even be possible to treat cotton socks or the linings for shoes so that they will not act as carriers for the famous, or shall we say infamous, ringworm, known as athlete's foot.

The Cotton Chemical Finishing Division of the Southern Regional Research Laboratory is being organized and equipped to carry on the finishing research for which

the cotton manufacturers as a whole are unable to provide. We recognize that a certain amount of research along this line is being done in the laboratories of those chemical firms who manufacture specialties for the textile trade. However, such research is handicapped by the fact that each manufacturer is naturally biased in favor of his own products, and the results of his research are usually made available only to his own customers.

In the Southern Laboratory a special section of the Finishing Division will devote its time to the study of additive finishes for cotton. It will make a complete survey of the synthetic plastics and other organic compounds now available to the cotton industry and will try to determine which are most suitable for producing the various effects desired and how they can be satisfactorily and economically applied to cotton goods on a commercial scale. Furthermore, as a result of our experience with existing compounds, work will be undertaken to develop new and still more efficient compounds.

Another section will study chemical reactions on the cotton itself, with a view to modifying the surface characteristics of the cotton fiber by actual chemical change. That this is not beyond the realm of possibility has been demonstrated by previous accomplishments with mercerization (a form of chemical action on cotton by caustic soda) and by the Furness or Ridbo process which uses a copper and ammonia solution to impart a particularly lustrous and crisp finish to cotton voiles and lawns.

Since the national problem of increasing the utilization of cotton in wearing apparel and household fabrics goes beyond the laboratory development of new and attractive finishes for cotton fabrics, a definite part of our program is to demonstrate the commercial practicability of each successful laboratory development; and finally, to complete the job, these new finishes must come into actual commercial use.

All this entails co-operation of the broadest type. We need, first, the co-operation of cotton manufacturers and finishing plants, and we are enthusiastic about the co-operation received so far from those people. On my recent visit to ten representative cotton mills scattered through the South, among them some of the largest finishing plants in the country, the executives everywhere gave me a very cordial reception and indicated a willingness to co-operate in every way possible with our program.

However, in order to capitalize fully on the results of our work, it is necessary to go even beyond convincing the manufacturers of the commercial practicability of these finishes. As was shown in the case of Sanforizing, every suitable means must be used to acquaint ultimate consumers with the desirable new developments—not by high-pressure advertising but by giving the true facts to as many consumers as possible and showing them what to expect from the new finishes. For this purpose, we need co-operation from home economics groups, women's clubs, and other organizations like your own. If a sufficient consumer demand is aroused for cotton goods with a certain new and attractive finish, there will be no difficulty in persuading the wholesaler to purchase and the manufacturer to produce such goods in any desired quantity.

In short, the mission of the Cotton Chemical Finishing Division is to develop in the laboratory new and attractive finishes for cotton textiles, to demonstrate to the cotton mills that these finishes can be successfully applied on a commercial scale, and to co-operate with all organizations interested in acquainting the ultimate consumer with the value of these finishes. Thus the basic function of the Southern Regional Research Laboratory will be performed—namely to stimulate a larger use of cotton, the South's chief agricultural product.

SIGNS OF THE TIMES

THIS SPRING'S CONSUMER CONFERENCES

HARRIET R. HOWE

Last year two pioneer efforts to examine and give direction to the growing interest in the consumer as an economic entity were initiated. The success of both the first National Conference on Consumer Education which the Institute for Consumer Education at Stephens College held in Columbia, Missouri, in April (see page 390 of the JOURNAL for June 1939) and the Business-Consumer Relations Conference which the National Association of Better Business Bureaus held in Buffalo in June (page 477 of the JOURNAL for September 1939) encouraged each to call a second conference this year.

The wisdom of these decisions was shown by the increase in registrations this year, by more substantial interest in the subjects under discussion, greater frankness, and more tolerance toward unreconciled opinions on the part of both speakers and discussants.

The Stephens College Conference, which is purely educational in character, was dedicated this year to "Making Consumer Education Effective." Much of the conference time was given over to 24 informal round tables and to general discussions which followed the scheduled speeches. The speakers were outstanding leaders in consumer education, many of them home economists, among the latter Hazel Kyrk, May Cowles, Mary Rokahr, Day Monroe, Margaret Reid, Ruth O'Brien, and Florence Fallgatter. Such special approaches to the subject as that of labor, the Better Business Bureaus, and co-operatives were explained by Mark Starr, Kenneth Backman, and Herbert E. Evans, respectively. The most dramatic session was the one on "What Should Be Taught about Advertising," where Professor Harold Rugg struck back at the humorous, but, in the opinion of many teachers, superficial treatment of the issue by Douglas Taylor.

Hazel Kyrk's paper "What Is Consumer Education," easily one of the best of the conference, provided an excellent springboard for the round-table discussions which followed it.

Some confusion resulted from the futile attempts of the greedy to cover six or eight different round tables during the same two-hour period, but the patient were rewarded by the engaging summary given by Professor Malcolm S. Maclean of the University of Minnesota.

Of special interest to home economists was the round table on "What and How to Teach Home Economics Students" led by May L. Cowles, where discussion centered on the objectives of consumer education, the content of such home economics courses, and how and where such problems should be presented. The incorporation of consumer problem material in the present curriculum through an integrating course, using background and personnel from many departments and also available community resources, was the solution recommended.

The interests of the participants in the conference were very varied, including manufacturers, producers, retail merchants, trade associations, magazine publishers, national advertisers and advertising agencies, commercial and consumer testing laboratories, government agencies, con-

sumer groups, women's organizations, co-operatives, and labor, as well as college and high school teachers from departments of science, business, social studies, and home economics. This fact and the size of the conference made it difficult to "get down to brass tacks," but there was nothing to indicate the existence of differences fundamental enough to make satisfactory co-operation impossible; and there was much to indicate that considerable progress had already been made toward a better understanding between the various interests.

At the Better Business Bureau Conference, the program of one entire session was turned over to representatives of the American Association of University Women, General Federation of Women's Clubs, and American Home Economics Association, who explained consumer buying difficulties and recommended the addition of facts in advertising and labeling which would describe the pertinent characteristics of goods, simplify identification, and make comparison possible. The extent of organized work for consumers was dramatically illustrated by a spot map which showed the location of active A.A.U.W., G.F.W.C., state home economics associations, and unaffiliated consumer study groups, the number and percentage of the high schools in each state teaching consumer buying units, and the counties where home bureaus have chosen to study household buying. The proposed platform for consumer relations with business was presented, and an invitation was extended to the Bureaus to work with consumer organizations through the National Consumer-Retailer Council.

Dr. Helen Judy Bond, along with Dr. John M. Cassels and Dr. Edward Reich, gave the educators' view of the extent and influence of consumer education at another session, and Dr. Pauline Beery Mack as a luncheon speaker outlined "Consumer's Progress." Especially significant were the reports of such business executives as Edward J. Conden of Sears, Roebuck & Company, Thurmond Chatham of the Chatham Manufacturing Company, and Jules Labarthe, Jr., of Kaufman's in Pittsburgh on their successful experience with informative selling.

At its second forum in Chicago in May, the American Retail Federation emphasized its interest in the consumer point of view by inviting Mrs. Saidie Orr Dunbar, president of the General Federation of Women's Clubs, to speak as a representative of the consumer organizations in the National Consumer-Retailer Council, and this she did at the final luncheon session, with "The Consumer's Part in Democracy" as her subject. Immediately following this session a post-forum meeting of the National Consumer-Retailer Council gave midwest consumers and retailers an opportunity to see the Council in action. Donald M. Nelson presided, and Roger Wolcott, P. G. Agnew, and Fred C. Hecht spoke on various phases of informative selling.

A new "first" was recorded when the Chamber of Commerce of the United States took note of women as consumers and invited them to take part in a session of its annual meeting. The Distribution Division devoted its round table to "Appraising the Consumer Movement" under the leadership of Major B. C. Namm, a prominent retailer. Mrs. Dunbar and Mrs. Howe spoke for consumers.

The American Marketing Association also devoted considerable time at its annual meeting in May to consumer responses to marketing practices. Much more publicity was given to a kind of blindfold test of the preferences of nineteen non-professional housewives than to the well-rounded presentations and discussions of business relations with consumers.

It is reported that the Town Hall type of meeting arranged by the American Association of Advertising Agencies during its

sessions in May set a new standard for consumer movement discussions in the future. Its subject was "To What Extent Should Advertising Be Controlled and By Whom?" with Stanley High and Fulton Oursler "defending" advertising and Colston Warne and Donald Montgomery appearing as critics.[1]

Far more important than the papers presented at these conferences were the opportunities they afforded for "representatives" to exchange ideas and come to know one another as people. To listen to another's point of view, to understand his problems, breeds tolerance or even sympathy. Looking back over more than twenty years of effort by the American Home Economics Association to focus attention on the consumer's stake in the problems of production and distribution, it is heartening to see all this substantial evidence of a growing "consumer consciousness" on the part of the public and to realize that to a considerable degree it is the result of the pioneer efforts of home economists.

AMERICAN ASSOCIATION FOR ADULT EDUCATION

DORA S. LEWIS

"The Democratic Way of Life—An Educational Process" was the theme for the fifteenth annual meeting of the American Association for Adult Education at the Astor Hotel, New York City, May 20 to 23. Grave concern for the fate of democracies and for the survival of the ideals toward which they have been moving was repeatedly expressed, but at the same time there emerged the conviction stated by Dr. Alvin Johnson, president of the Association: "If America stands firmly by democracy, developing her resources, material, moral, and intellectual, as only a democracy can, the time will come when the very concept of totalitarianism will sink back into the darkness whence it sprang."

Adult education forces were urged to unite more effectively to arouse the American people to an appreciation of their cultural heritage and to teach them to examine and test the issues of our time in terms of what in the American way of life they most want to conserve. Americans were seen as ill prepared to meet the menace of propaganda, and adult education was called on for mass impact for the development of widespread intelligence in dealing with basic social problems, including international co-operation. Those participating in the meeting definitely dedicated themselves to the task of coordinating the activities of educational agencies for these purposes, to using more effectively all of the newer media of education (motion picture, radio, forum), and to finding and training leaders with special aptitude for work with adults.

Section meetings on teacher training, mental hygiene, recreation, vocational guidance, programs of women's organizations, use of museums, community schools, and other phases of education carried on informative programs, including several plans for the development of adult education.

The meeting of the section on "Family Life in a Democracy" was ably directed by Mrs. Mary Shattuck Fisher. Dr. Ernest Osborne discussed ways in which basic attitudes of individuals come from family experience.

Dr. Randolph Smith used the Bill of Rights as a framework for discussing democracy in family relationships and asked, "How much freedom of speech is there in families, how much freedom of

[1] While the supply lasts, mimeographed copies of Mr. Montgomery's address, entitled "Two Consumers Talk to Advertising," may be obtained on request to the Consumers' Counsel, U. S. Department of Agriculture, Washington, D. C.

press, of assembly, and of redress of grievances?" The implications seemed to be that parents are not receptive to the idea that children need all of the opportunities suggested. He then turned to the question "Can we make the world safe for families?" and indicated that the frustrations to which families are now subjected through both economic and emotional insecurities result in the reactions characteristic of the "totalitarian personality." His conclusion was that it is impossible for individual families to work out their economic problems; that the social order must be reorganized if it is to be safe for family life; and that since the social order is our own handiwork, it can be changed.

In summarizing the section meeting, Mrs. Fisher placed emphasis on the immediate opportunities of educators to use their varied abilities in finding the unused resources of individuals and communities and getting them into action in the interest of family happiness and well-being.

Throughout the entire program there was realism in regard to the desperate situation in world affairs, paralleled with confidence that in the long-time plan spiritual values would prevail and awareness of the monumental task facing adult education.

In projecting a program of work for the Association the director said: "In these crucial times it is important not only that we maintain our free and independent adult education programs for the discussion of controversial issues as they arise, but also that we multiply opportunities for open discussion of national and international questions that affect us. This leads unescapably to the conclusion that experimentation, demonstration, organizational promotion of opportunities for adult education, and research in the preparation of materials for study at every adult level should proceed on an enhanced scale. Whether Americans fight or remain neutral, their institutions and agencies for adult education must be preparing for peace."

Summary accounts of results of the extensive research studies, experimental programs, and recent publications sponsored by the American Association for Adult Education will be found in the annual report of the director. The total accomplishment and the plans for meeting emergency needs add up to a program wide in scope and far-reaching in its ramifications. Home economists will not be found wanting in these new calls to service.

HOME ECONOMICS AT THE NATIONAL CONFERENCE OF SOCIAL WORK

MARJORIE M. HESELTINE

Again this year the social welfare and public health department represented the American Home Economics Association at the National Conference of Social Work, held in Grand Rapids, May 26 to June 1. As in previous years, the small number of home economists (about sixty) who attended the Conference agreed that it was a rewarding professional experience. The very smallness of our group at these conferences and our closely allied interests make for a give-and-take that is not so likely to prevail in large and less homogeneous gatherings. Discussions begun at formal sessions continued at impromptu round tables during the dinner hour and sometimes far into the night. The exhibit booth that serves primarily to acquaint other social welfare workers with the materials and services available from the American Home Economics Association is always a meeting place for home economists.

At Grand Rapids an unusually commodious booth made it possible for several consultations between home economists and other social welfare workers to proceed simultaneously. Although visitors to the

booth represented a wide range of interests and affiliations, public welfare administrators stood out. They seemed particularly eager to learn what help home economists can give in setting up guides for evaluating the economic resources of families applying for assistance and in formulating standards to be used in giving financial assistance to families. Social workers dealing with rural problems asked for suggestions on co-ordinating their programs with those of the agencies that employ home economists for educational work and other forms of service to farm families. Although the questions were no less numerous nor less varied then in previous years, they seemed to be more pointed and to indicate a growing understanding and appreciation of the contributions of home economists to social welfare.

The program for the departmental sessions, both those held separately and those held in conjunction with other groups, followed the plan outlined tentatively in the May *Bulletin* of the Association. The only unexpected feature was the very large attendance at the Monday afternoon session on the general topic "How Dependent Families Live." After 110 people had filled the meeting room to capacity, many others had to be refused admittance. Each of the three papers read at this session presented factual data on the effect of relief allowances and other forms of assistance on levels of living of family groups. At the Tuesday session, two formally scheduled speakers and two discussants dealt with "The Use of Volunteers in Home Economics Service." One of the discussants, Mrs. George Sands, is a former professionally employed home economist who, as a member of the board of the Visiting Housekeeper Association of Detroit, directs the service of volunteers without home economics training. To round out the discussion, the point of view of the volunteer herself was presented by Mrs. Harold Koopman, a graduate in home economics from Michigan State College, who gives her services as a teacher of nutrition classes to the Grand Rapids chapter of the American Red Cross.

At the luncheon meeting on Wednesday, members were seated at one of four tables according to their special interest. Taking a leaf from the W.P.A. theater project, the luncheon program followed the living newspaper technic. At each table a discussion leader acted as a star reporter in telling the entire group the important points brought out in the course of the conversation during the luncheon. The spokesman for community nutritionists was Dorothy Hacker of the Detroit Visiting Nurse Association. Barbara Dell of the Michigan Social Welfare Commission reported on live issues in home economics service to public welfare agencies. Frances Preston of the Associated Charities of Cleveland, ably aided by two "cub reporters," covered the fields of family welfare agencies and the Work Projects Administration. Mrs. Mary Thompson, associate state director of the Farm Security Administration in Michigan, spoke for home economists in rural welfare work.

A joint meeting with the committee on homemaker-housekeeper service, held on Wednesday afternoon, attracted an audience of more than 100. In addition to the speakers scheduled on the preliminary program, Ruth Chalmers of the federal headquarters office of the Work Projects Administration outlined recent developments in housekeeping-aide projects. Most of the home economists who deal directly with the service of visiting housekeepers remained for the closed meeting on Thursday afternoon arranged by the committee on homemaker-housekeeper service.

A feature that was not scheduled in the program but that will make the Grand Rapids conference stand out in the memory of those present was the display of tulips at near-by Holland, site of the largest tulip

garden in this country. Thanks to the cool weather, the blooms were still in full glory throughout the week of the conference.

IF YOU WANT TO BE A BETTER BROADCASTER

RUTH VAN DEMAN

It may seem a long jump to Columbus, Ohio, May 1941. But if you are a home economist who sees in radio educational possibilities hardly scratched as yet, or if you are uncertain about your technique when you face the microphone, then you will want to put down now on your spring conference schedule the Institute for Education by Radio, at Ohio State University.

Started in 1930 by Dr. W. W. Charters and a handful of others who felt that educators and professional broadcasters had much to learn from each other, this conference last spring brought over 400 to its three-day sessions. Teachers and students from radio workshops in high schools and colleges rubbed elbows with network executives, station directors, men and women who know radio from every professional angle.

Of the afternoon clinics and work-study groups, agriculture and home economics, under the chairmanship of John Baker, extension man for the Radio Service of the U. S. Department of Agriculture, drew the biggest crowd, stimulated the liveliest discussion. In that friendly atmosphere no one hesitated to ask a question or air a pet opinion. The less-than-a-dozen women in the group had but one regret—that more of their kind from extension and resident college staffs were not present to benefit by this experience meeting and gain a clearer idea of what good broadcasts can accomplish for home economics.

Evening round tables, run in the same informal way, again gave opportunity for the greenest amateur to ask the advice of experts in the craft. In fact an hour at one of these round tables gives even the experienced radio person new insight into technical problems and fresh enthusiasm for the job. At least that is the way it was in the crowded room where John S. Carlile, one-time production manager for CBS, now director of radio activities for the University of Alabama, generously shared his wide experience. Before the group reluctantly separated near midnight the discussion had ranged over practically all the techniques of radio—everything from where to place the microphones to pick up the best tonal effects from a brass band . . . to fine points in script writing . . . to need for showmanship of a high order . . . even to Matthew Arnold's poetry quoted for its steadying philosophy in these uncertain times.

At the final afternoon clinic two types of educational programs were operated on with complete candor by a panel of judges who sat with backs to the platform while professional actors, the experienced author-speaker, and an orchestra from the Cincinnati College of Music broadcast into the ballroom microphone. The discussion that followed, first in panel and then from the floor, brought sharp clashes of opinion on certain points in technique—always a sign of vigor and growth in any profession. Even though these particular broadcasts were of a rather ambitious type, they suggested how some phases of home economics might well be developed.

For everybody in the professional radio game realizes that homemakers are the chief daytime listeners. Both networks and local stations want to cater to this audience. They are eager for good home economics programs as sustaining features. But what often stymies them is why people with such interesting human things to talk about so often seem unable to talk about them in an interesting human way. Which

of course is the purpose of the Columbus conference—to encourage and assist any person who wants to use expertly this "most ubiquitous form of communication yet devised by man."

For the joint sessions on agriculture and home economics next May, the Columbus program planners are extremely open-minded toward home economics. They will welcome more women speaking up from the audience. And they already have jotted down as prospective speakers the names of several women doing noteworthy radio jobs in the States. One, for instance, is a home demonstration agent in Nebraska who has organized the 30 homemakers' clubs in her territory to take their turn in a series of daily broadcasts—no mean accomplishment in a state with such great open spaces.

Personally I feel that these joint sessions on agriculture and home economics can take us far toward better broadcasts on both subjects. Some day there may be a special session at the Columbus conference headed home economics. But it would be a step backward to make it a hen party. These joint sessions on radio technique make joint broadcasts "a natural." There is much to be gained from more home economics programs with men chiming in and more talks on agriculture with women taking part. These are subjects equally significant for men and women. And particularly when home problems are under discussion it is important not to make them appear just as women's business.

MAINTAINING GOOD NUTRITION IN A FAMILY GROUP[1]

BERTHA BISBEY

The newer knowledge of nutrition points the way to the attainment of buoyant health, physical efficiency, and long life. In the words of McCollum, "A liberal use of protective foods leads to the preservation of the characteristics of youth." The health and general well-being of the family depend more on diet than on any other single factor. Since our newer knowledge of nutrition should enable us to plan adequate diets, why then are so many of our diets obviously inadequate? The answer is found in the following contributing factors:

1. Food habits or family customs: for example, the bread, meat, and potato diets with the lack of such protective foods as milk, eggs, fresh vegetables, and fruits.
2. Not knowing what constitutes an adequate diet.
3. Not knowing food needs and food values in relation to costs.
4. Not having enough money to spend for foods.
5. Lack of planning in producing foods on the farm.

To plan the food supply wisely, in order to nourish the family adequately, requires knowledge on the part of the home manager of:

1. The needs of the family for energy, growth, maintenance, and regulation of body processes.
2. The nutritive value of foods in relation to cost. Only by this means can she be assured of meeting the needs of the family at her particular income level.
3. The care and preparation of foods.

The lower the income, the greater must be the intelligence and ingenuity of the manager. For example, if she has only enough money for cabbage, then she cannot have Brussels sprouts or cauliflower. If she has money with which to buy tomatoes at 10 cents a can, she should not be told that she must have citrus fruits, such as oranges and grapefruit, unless, as sometimes happens, they are inexpensive.

If the newer knowledge of nutrition is to function in everyday living, it must be interpreted and applied in terms of facts to be used in planning the family meals.

[1] Paper presented before the Department of Home Economics, National Education Association, St. Louis, Missouri, February 24, 1940.

These facts in any given community are disseminated mainly through the teachings of the home economist.

Research is rapidly contributing new thoughts and facts with which every teacher of nutrition should be familiar. For example, calcium, which is so necessary to good nutrition, is still being investigated in a number of laboratories, in relation not only to the amounts we need but to its availability in foods. We are all familiar with the standard set up by Sherman of 0.68 gram of calcium per man per day as the minimal adequate. The more recent standard set by the Commission on Nutrition of the League of Nations is 0.75 gram per man per day. Sherman suggests 1 gram daily as optimal per adult population for both men and women. The newer standard for pregnant and lactating women is 1.5 grams daily. One gram of calcium per child per day, without distinction of age or sex, as set by Sherman, is still the accepted standard.

In order to insure enough calcium in the diet, we need to know our foods, not only their sources but also the extent to which the calcium in them is available. At the top of the list is milk, as regards both quantity and availability to the body. Many of the green, leafy vegetables, such as spinach and mustard greens, have a high percentage of calcium; but we have learned through actual experiments in feeding these foods to human beings that the availability of the calcium is comparatively low, less than 50 per cent.

Iron and copper hold an important place in nutrition and cannot be left to chance. It is not a question of how much iron is contained in the daily diet but rather how much of the iron present in foods eaten the body can use. Again coming back to the green, leafy vegetables, less than 50 per cent of the iron in spinach and in various other greens is available. Therefore, if we rely largely on these leafy vegetables as the main source of iron, we are likely not to have all we need. This must not be construed to mean that green, leafy vegetables do not have an important place in the diet but rather that we must use them intelligently and supplement where needed. We should know that liver, egg yolk, apricots, peaches, prunes, whole-grain cereals, and peas (to mention a few) are reliable sources of iron. As a rule, copper is found along with iron. As more has been learned about the lack of availability of some of the iron in foods, the tendency is to set the standard higher—particularly for pregnant women—at 17 to 20 milligrams per day.

Recently considerable interest has been manifested in trace elements, but, with the exception of iodine in goiter regions, any well-selected diet may be expected to contain them in sufficient amounts.

Vitamins are a story in themselves, and time does not suffice for even a brief survey of our present knowledge of their chemistry, their functions, and the manifold disturbances resulting from a lack of any one of them in the daily diet. Since we have become able to catalog them and study them as chemical entities, we have been able to devise means of measuring the human requirements for some of them. For example, the measurement of dark adaptation in vitamin A deficiency is a step in setting up human requirements for that vitamin. The researches in the field of the vitamin B complex, if we may so designate it, have been of inestimable value to the nutritionist and clinician alike.

To us as home economists is given the task of interpreting the findings of research in light of the needs for good nutrition in normal families with whom we work. In the selection of foods to insure adequate diets, there is perhaps no better guide than is found in the bulletins of Stiebeling and her collaborators.

One need not worry about protein,

minerals, and vitamins if the daily diet includes: 1 quart of milk a day for a child or 1 pint for an adult; citrus fruits or tomatoes; whole-grain cereals; green, leafy, or yellow vegetables; other vegetables; eggs (1 daily or at least 3 or 4 a week); a serving of lean meat (liver once or twice a week); butter; and from one-half to one teaspoon of cod-liver oil per child.

One thing that should not be omitted in planning for the family is to warn against food fads. It is amazing how extremely gullible ordinarily intelligent persons are when exposed to clever advertising.

Our people would be better fed if they spent more money with the butcher, the milkman, and the grocer and less on vitamin concentrates and doubtful food preparations.

THE ZOO HOTEL[1]

FLORA G. ORR

Mr. William Blackburn is head dietitian and steward at the big animal-kingdom hostelry in the Rock Creek Park area of the District of Columbia. It is called the National Zoological Park, and there some 3,500 animals, big birds, and reptiles live in protective custody and don't seem to mind it a bit.

And if you don't think food is an item, just remember that it takes $30,000 every year to provide meat, bread, cereals, hay, fruits, vegetables, fish, and other delicacies for these guests of the nation.

On a casual trip to the National Zoological Park, you wouldn't be likely to see the kitchens or be permitted to inspect them. There is one entire building where meat and fish are kept in cold storage. Seven hundred pounds of beef are needed every day and 175 pounds of fish. There are big cases of eggs too. Spinach, kale, cabbage, Irish potatoes, sweet potatoes, onions, carrots, turnips, oranges and other citrus fruits are bought by the gunny-sackful. Bananas are bought by the bunch—about six bunches will last three days at the zoo—maybe. Every day the zoo truck goes to market to get fresh vegetables and fruits and fresh fish. Meat is delivered on contract, and it is grade A, inspected.

In a second building, two or three cooks and bakers are busy all the time. They bake 300 pounds of yeast-raised brown bread every day; it is made according to Mr. Blackburn's recipe and contains the wheat germ. In the kitchens, big hotel stoves are used, and the day I saw them a special rice pudding with raisins was being made for the monkeys. There were stacks of the brown bread in big loaves. I ate some of the bread. It was excellent. The cook on duty at the time said it was all right cooking for animals—they never complain.

Big bakeries have contracts with the zoo to provide leftover stale bread from their stocks. There were big baskets of this bread in the kitchen, including a great many buns with frosting and raisins. "The monkeys love these fancy breads," said Mr. Blackburn.

Bears eat bread as well as fish and meat, but the lions and tigers won't touch anything but meat. Some lions and tigers eat politely with their mates. Others have to be separated at mealtime or there would be serious trouble.

Mr. Blackburn knows that animals must have their vitamins and minerals to remain in good health. He has a good general idea, too, about how many calories per day are required by a bear weighing 800 or 900 pounds, or an active orangutan, weight 135 pounds.

[1] Based on an article in *The Mayflower's Log* for March 1940 and published by courtesy of that magazine.

EDITORIAL

CLEVELAND

The Cleveland meeting of the American Home Economics Association will be reported at length in the September *Bulletin* and the October JOURNAL; hence only a few outstanding or urgent things will be told about it here.

To begin with, the attendance reached about 2,240, a few more than the Pittsburgh record of 1938. The weather erred more on the cool than on the hot side, to the satisfaction of most of those present. The local committees had done their job so well that the visitor was not conscious of the machinery that kept things running smoothly and pleasantly, and they had provided a fine choice of trips and diversions.

The most important business was the revision of the constitution and by-laws to put into effect the professional qualifications for membership agreed on at the annual meeting of 1939. The changes submitted to all members in the May *Bulletin* were adopted with only minor changes, though there was some discussion about the provision for so-called junior members. After August 1, 1940, new members must be home economics graduates of recognized colleges or have equivalent training; they will pay $3 a year to the American Home Economics Association, plus whatever state dues are set by the state association to which they belong; and they will receive the official magazine of the Association as a privilege of membership. Junior members are persons qualified for regular membership who pay only $1 in dues to the American Home Economics Association and who do not receive the JOURNAL; they may not remain junior members for more than three years. The new membership requirements will not be retroactive.

Another important item of business was the adoption of resolutions regarding the place of home economics and home economists in the national defense program. It was very evident that the membership wished to place the services of the Association at the disposal of the government, though the situation had not then developed sufficiently to make specific proposals. At the full business session it was voted to send the following to President Roosevelt:

> Whereas the home is the first line for national defense and the center of influence in the development of the democratic way of life, and whereas home economics is concerned with the best use of time, material, and human resources within the family; therefore, resolved that the American Home Economics Association, assembled in annual convention in Cleveland, pledge its support to national defense and urge the President of the United States to utilize the services of its members.

Another resolution offered the assistance of the Association to Miss Harriet Elliott, consumer adviser on the Advisory Commission to the Council of National Defense.

Officers elected at Cleveland are Mildred Horton of Texas, vice-president, and Mrs. Katharine M. Ansley, formerly executive secretary of the Association, treasurer.

FULL STEAM AHEAD

The new membership requirements and the possible need of swift action in a national emergency both mean that state and local home economics associations

must swing into action earlier than usual this autumn.

Each state will have to appoint its membership credentials committee to pass on applications for membership as required by the new by-laws. These committees will work in close co-operation with the national membership credentials committee and the Washington staff, who will provide the blanks for recording new members and reporting them to the central office. Of course there will be confusion as we shift from the old way to the new, and all concerned are prepared for a bothersome year, but they don't foresee any difficulties that can't be overcome with patience and good will. We shall be more than repaid for our trouble by new unity and prestige as we become a genuinely professional organization.

One of the puzzles that will have to be worked out is how to adjust matters for members who have already paid JOURNAL subscriptions in addition to memberships for this year. It is proposed to make reimbursements in cash, a rather exacting job with records and arithmetic for the Washington office. The individual subscriber may rest assured she will get her money's worth or her money back.

If the government requests any nation-wide assistance from the American Home Economics Association, the word must be promptly passed on to state associations. As this is written, early in July, there is no way of telling when and what that may be; but state officers should hold themselves ready to act at short notice, and as a beginning might well think out whom they would call on to get all home economists in the state quickly informed and brought into line.

INTERNATIONAL FELLOWS

One of the pleasant features of the Cleveland meeting was the presence of the Association's two international fellows, Sophie Wakim of Syria, who has been for two years at Ohio University, Athens, and Benedicta Gonçalves of Rio de Janeiro, who has just finished the year at Purdue University. Both girls charmed all who came to know them, but especially the members of the student clubs. If anything was needed to "sell" the idea of the international fellowship fund to the club delegates, these two young foreigners gave it. The delegates again voted to put contributions to the fund on the student club department's agenda for the year and went back home full of enthusiasm and wishing that somehow they could get one of the six 1940–41 fellows to a student club meeting in every state during the coming year.

The international committee will do all it can to make this stimulus carry over into the next school year, and so will the *National Magazine of Home Economics Student Clubs*. The committee plans to get into prompt touch with all state club advisers, and the September issue of the student club magazine will tell about the fellows and the fund and will follow this up each month with more suggestions to interest the girls and raise money. The earlier the money comes in, the more effectively the committee can plan for 1941–42. So here is another call for full steam ahead.

AMERICAN EDUCATION WEEK

"Education for the Common Defense" is the appropriate theme selected for the observance of American Education Week, November 10 to 16, 1940. It is likely to have special significance this year because school budgets are in many places greatly reduced and elsewhere endangered by the tremendous pressure for public funds for other purposes.

It will be remembered that American Education Week is sponsored by four national agencies: the National Education Association, the American Legion, the National Congress of Parents and Teachers, and the U. S. Office of Education. These agencies initiate the program each year and contribute in various ways. Scores of other national and state organizations cooperate. School systems, teacher organizations, and lay groups make the observance count locally.

Because this year is the twentieth anniversary observance of the Week, the Life Membership Dinner held during the N.E.A. meetings in Milwaukee last July was dedicated to the anniversary, and speakers from the four sponsoring organizations told of its founding, accomplishments, and influence. The anniversary will also add interest to the November celebration.

The topics assigned to the individual days are: Sunday, "Enriching Spiritual Life"; Monday, "Strengthening Civic Loyalties"; Tuesday, "Financing Public Education"; Wednesday, "Developing Human Resources"; Thursday, "Safeguarding Natural Resources"; Friday, "Perpetuating Individual Liberties"; and Saturday, "Building Economic Security." Among these, home economists will have no difficulty in finding an appropriate place. As usual, materials to assist all types of schools to carry out this observance will be ready for distribution on September 1, 1940. Write the National Education Association, 1201 Sixteenth Street, N. W., Washington, D. C.

RESEARCH

PHYSICAL PROPERTIES OF WOMEN'S FULL-FASHIONED HOSIERY KNIT FROM COMMERCIAL COTTON YARNS

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DUE largely to the efforts of the Bureau of Home Economics, cotton hosiery for women has received considerable attention during the past two years as one possible outlet for part of the surplus American-grown cotton (*1*). At the request of Congress the Bureau has investigated the possibilities of improving the appearance and wearing quality of such hose and has developed types suitable for a variety of uses. Cotton hose are particularly well adapted for sports, home, and general outdoor wear, and novelty effects are attractive for afternoon and evening (*2*).

A survey of the literature shows that the hosiery analyses published to date have been concerned with silk hose (*3*, *4*, *5*, *6*). This study reports the analysis of 43 styles of full-fashioned cotton hosiery in different weights and patterns (*7*), designed by David H. Young of the Bureau staff. In addition to these, two kinds of cotton hose bought on the retail market were also analyzed.

Manufacture of the hose. For the manufacture of the hose designed by the Bureau, yarns representative of those on the market used for knitting hosiery were purchased in a range of yarn numbers from 60/2 to 120/2. These were knit into 23 plain and 20 patterned hose constructions.[1] Of the latter styles, 17 were all-over mesh patterns. The other three had clocks or stripes. With the exception of the yarn for style 4, which had one component of spun rayon, all yarns were made from American upland cotton known commercially as "Peeler," and were combed, mercerized, and gassed. The hosiery construction details are given in table 1. Styles 8, 9, 32, and 33 were knit by one company; styles 40 to 43, inclusive, by another; and the remainder by a third knitter.

All hose were knit size 9½ on modern full-fashioned silk hosiery machines. Styles 13 to 18, inclusive, were made on a 3-carrier hosiery machine. No change in knitting elements on any machine in any of the three plants was required to knit cotton stockings instead of silk. Five to seven dozen pairs of each design were manufactured.

All the hose were scoured. Only those which were to be finished white (undyed), numbers 8, 9, 32, and 33, were bleached. For the ingrain-dyed hose the yarns were dyed in the skein for styles 13 to 18 and for numbers 10 to 12 and 40 to 43 in the package form. No special finishes were applied to any of the hose reported in this study. Dyes 1 to 5, inclusive, were used to dye the hose to colors shown on the current Hosiery Color Card of America.

The two styles bought on the retail counter had plain welts. Of these, style 44 was a non-run full-fashioned hose knit

[1] Photographs of all the style numbers are on file at the Bureau of Home Economics, U. S. Department of Agriculture, Washington, D. C.

TABLE 1

Construction of 43 styles of full-fashioned cotton hosiery knit from commercial yarns

GAUGE AND STYLE NUMBER	DESIGNATION‡ OF MAIN YARN	YARN NUMBER		PATTERN STITCH	COURSES PER INCH	DYE METHOD	COLOR	TYPE OF WELT	TYPE OF TOE	TYPE OF HEEL
		Main	Reinforced							
42-GAUGE										
1	A1	60/2	100/2	Plain	40	Dip	Dye 1	Stretch	Solid	Solid
2	A1	60/2	100/2	"	40	"	"	Plain	"	"
3	B1	60/2	100/2	"	40	"	"	"	"	"
4	C1	60/2	100/2	"	40	"	"	Stretch	"	"
5	B2	70/2	100/2	"	40	"	"	Plain	"	"
6	B3	80/2	100/2	"	40	"	"	"	"	"
7	D1	90/2	90/2	"	42	"	"	Stretch	"	"
8	D1a	90/2	90/2	"	43	Undyed	Bleached	Plain	"	"
9	D1a	90/2	90/2	"	43	"	"	Stretch	"	"
10	D2	90/2	90/2	"	44	Ingrain vat with natural foot	Dye 2	Plain	"	"
11	D2	90/2	90/2	"	44	Same as 10	"	Stretch	"	"
12	D2	90/2	90/2	"	44	" "	"	4" lastex	"	"
13*	—	90/2	90/2	All-over mesh petinet (a)	40	Ingrain	Dye 3 & 3a	Plain	"	"
14*, †	—	90/2	90/2	" " " " (a)	40	"	" " "	"	"	"
15*	—	90/2	90/2	" " " " (b)	40	"	Dye 4 & 4a	"	"	"
16*, †	—	90/2	90/2	" " " " (b)	40	"	" " "	"	"	"
17*	—	90/2	90/2	" " " " (c)	40	"	Dye 5 & 5a	"	"	"
18*, †	—	90/2	90/2	" " " " (c)	40	"	" " "	"	"	"
19	E1	100/2	80/2	Plain	45	Dip	Dye 1	Stretch	"	"
20	E2	120/2	100/2	"	40	"	Dye 2	"	Mesh	Mesh
21	E2	120/2	100/2	Front panel	40	"	Dye 1	Plain	"	Solid
22	E2	120/2	100/2	" clock	40	"	"	Stretch	Solid	"
23	E2	120/2	100/2	Side clock	40	"	"	"	Mesh	"
24	E2	120/2	100/2	All-over mesh petinet (d)	40	"	"	Plain	Solid	"
25	E2	120/2	100/2	" " " " (e)	40	"	"	"	"	"
26	E2	120/2	100/2	" " " " (f)	40	"	"	"	"	"
27	E2	120/2	100/2	Plain	40	"	"	Lace	Mesh	"
28	E2	120/2	100/2	"	40	"	"	"	Solid	"
29	E2	120/2	100/2	"	40	"	"	"	"	"
30	E2	120/2	100/2	All-over mesh petinet (g)	40	"	"	Plain	"	"
31	E2	120/2	100/2	" " " " (h)	40	"	"	"	"	"
32	D6	120/2	90/2	Plain	47	Undyed	Bleached	"	"	"
33	D6	120/2	90/2	"	47	"	"	Stretch	"	"
45-GAUGE										
34	E1	100/2	120/2	All-over mesh petinet (i)	40	Dip	Dye 1	Stretch	Solid	Solid
35	E1	100/2	120/2	" " " " (j)	40	"	"	Plain	"	"
36	E1	100/2	120/2	" " " " (k)	40	"	"	"	"	"
37	E1	100/2	120/2	" " " " (l)	40	"	"	"	"	"
38	E1	100/2	120/2	" " " " (m)	40	"	"	"	"	"
39	E1	100/2	120/2	" " " " (n)	40	"	"	"	"	"
48-GAUGE										
40	D2	90/2	90/2	Plain	40	Ingrain	Vat dye 2	Plain	Solid	Solid
41	D3	90/2	90/2	"	40	"	Sulfur "	"	"	"
42	D4	90/2	90/2	"	40	"	Direct "	"	"	"
43	D5	90/2	90/2	"	40	"	Developed "	"	"	"

* Made on 3-carrier machine with 2 lots of yarn dyed to different depths.

† Same as preceding style, but with stitched overseam.

‡ Yarn designation refers to lots of yarn reported in manuscript "A Study of the Physical Properties of Commercial Cotton Hosiery Yarns."

from 2-ply yarn equivalent to a 61 single. Style 45 was a plain hose with a side clock and knit from 2-ply yarn equivalent to a 58 single.

Test methods. All hose before being tested were conditioned for at least 24 hours in an atmosphere of 65 per cent relative humidity at a temperature of 70°F. The determinations for wale and course count, bursting strength, and tests for the elastic properties of the hose were made on laundered stockings. To launder, each hose was placed in a one-pint jar containing 300 ml. of soap solution at 120 ± 2°F. The soap used was a 0.5 per cent solution of neutral chip soap in distilled water. The jars were placed in a Launderometer and agitated for 15 minutes at 120 ± 2°F. The hose were rinsed 4 times with soft water at the same temperature. Excess water was removed by centrifuging. The hose were boarded on standard drying forms, size 9½, and dried at room temperature. Twenty hose of each lot were measured before and after laundering to determine the shrinkage by the procedure outlined by Schenke and Shearer (*8*) for full-fashioned silk hosiery.

Seven determinations for the bursting strength were made on each hose instead of five as recommended by Schenke and Shearer (*8*). The number of wales and courses per inch were counted with a lunometer (*9*) at each of the seven places where the bursting strength was to be determined. The ball-burst attachment for the pendulum type breaking-strength tester was used (*10*). By means of the autographic recorder on the machine the percentage of elongation was determined. The values for 6 hose were averaged.

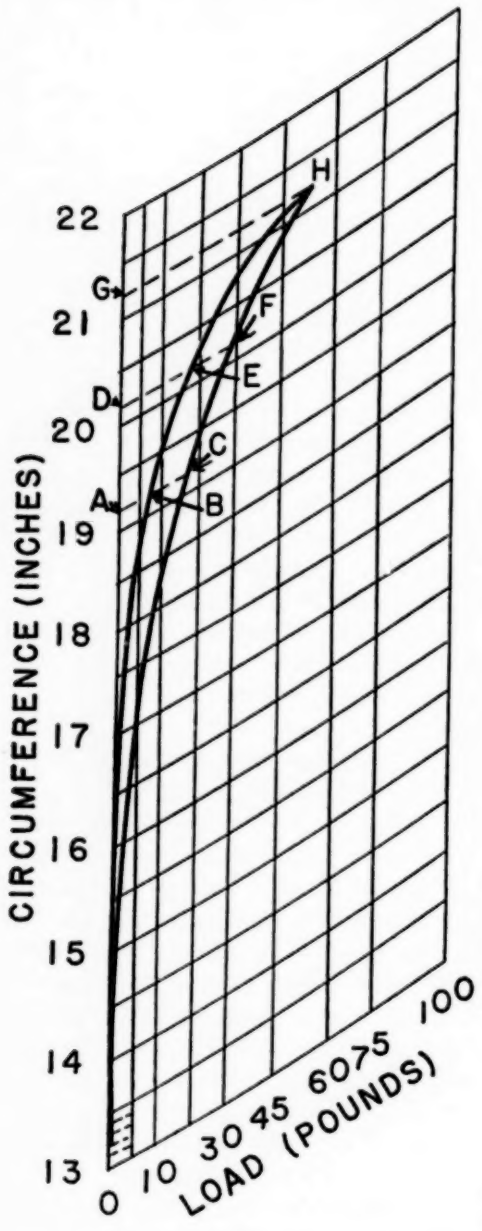
In studying the elastic properties of the hose, the hosiery testing machine described by Schiefer and Appel (*11*) and sometimes known as the Frazier machine was used. According to the recommended procedure (*12*) the length of knitted material between the two clamps was determined by the original length of the hose. For the work herein reported a distance of 25 inches was selected and the garter clasps were fastened one inch below the upper edge of the welt, the weight clamp 25 inches below the garter clasp. Six hose of each lot were tested.

Schiefer and Cleveland (*5*, *12*) evaluated the test for elastic properties of silk stockings with this machine as "distensibility," "recoverability," and "stretch-endurability." Since the effect of variables, such as tension, caused by boarding, handling of the hose during boarding and mounting on the machine, and uneven slippage of yarns, was considerably reduced at the 200th cycle, a measure based on the 200th cycle alone seemed more satisfactory than distensibility and recoverability, which were values based on the first test cycle. Accordingly an attempt was made to devise ways of describing the shape of the 200th cycle diagram which could be used to evaluate this test.

For hosiery specification work the United States Testing Company (*6*) used the load required to stretch the hose to the circumference of a leg five inches above the knee. This circumference based on the measurement of 50 individuals was found to be 19.2 inches. The load at 19.2 inches when the hose is stretched is designated as "s" (AC in accompanying figure). Similarly the loads at 20.2 and 21.3 inches are designated as "s'" and maximum load, respectively. The load at 19.2 on the recovery portion of the curve is called "r." These values were read from diagram.

The distortion or bagginess caused by 2,000 test cycles was also measured since the elastic properties of a hose are of interest in their relation to the ability of hosiery to retain its original shape. For this purpose, the change in width of the leg eight inches below the top of the hose, the point of maximum distortion, was determined for 10 numbers.

If hose did not fail before 1,000 cycles,



LOAD-CIRCUMFERENCE DIAGRAM TRACED BY THE STYLUS DURING ONE CYCLE OF THE TEST, WHEN THE HOSE WAS STRETCHED FROM A CIRCUMFERENCE OF 13.3 TO 21.3 INCHES AND ALLOWED TO RETURN TO 13.3 INCHES.

the test was stopped at that point in accordance with the recommendation of Schiefer and Cleveland (*12*). As the work progressed with cotton hose, 2,000 cycles was found to be preferable.

Hose were tested in duplicate for color permanence to washing, crocking, and perspiration, by the procedures outlined by Schenke and Shearer (*8*) modified by substituting a woolen cloth with floats of cotton, silk, viscose, and acetate yarns for the cotton-worsted union cloth. Since cotton hose are used outdoors the samples tested for color permanence to light were exposed for 20 hours as well as for 8 hours in the Fadeometer.

Results. Although the hose were all knit as size 9½, some lots averaged more than 9½ inches and some less, as shown in table 2. It was found during the course of shrinkage measurements that the changes in total length of the hose and in width at welt were greatly affected by the manner of boarding. The laundering procedure called for boarding on a standard form, and it is possible that a hose whose original foot length was less than 9½ inches would shrink less than one which originally measured more than 9½ inches. For these reasons, foot lengths before and after washing rather than changes in length are reported in table 2. One lot, style 6, shrank as much as 0.7 inch, while others showed no changes. However, the amount of shrinkage does not appear to be related to any of the construction variables.

As shown in table 2 hose knit 42 gauge or 28 needles to an inch when tested had 32 to 34 wales per inch, while 48 gauge with 32 needles to an inch tested 37 wales. The increase in the number of wales per inch with scouring and dyeing could not be determined for 45 gauge because these styles were knit in mesh design.

The cloudy or mottled appearance sometimes found in cotton hose was reduced by the use of a mesh petinet stitch. In general, all-over designs reduce this unevenness more than designs with consid-

TABLE 2

Physical properties of full-fashioned cotton hosiery

GAUGE AND STYLE NUMBER	FOOT LENGTH		COUNT		BURSTING STRENGTH	ELONGATION	ELASTIC PROPERTIES					TYPE OF WELT
	Before laundering	After laundering	Wales	Courses			Recovery load at 19.2 inches (r)	Stretch load at 19.2 inches (s)	Recovery stretch ratio (r/s)	Stretch load increase for the inch from 19.2 to 20.2 inches (s′ − s)	Maximum load at 21.3 inches	
	inches	*inches*	*number*	*number*	*pounds*	*inches*	*pounds*	*pounds*	*per cent*	*pounds*	*pounds*	
42-GAUGE												
1	9.5	9.3	33	40	57.8	0.18	4.1	11.4	36.2	11.6	50.3	Stretch
2	9.7	9.5	33	40	63.6	0.26	7.1	11.5	61.9	6.7	36.2	Plain
3	10.0	9.4	33	42	69.3	0.22	6.8	12.9	52.6	11.6	55.1	"
4	9.4	9.2	33	43	48.0	0.29	4.0	10.6	37.6	10.6	46.4	Stretch
5	9.6	9.3	33	41	60.6	0.18	6.6	13.0	50.8	11.8	54.0	Plain
6	9.9	9.2	34	41	51.2	0.19	6.0	12.0	50.5	8.8	46.1	"
7	9.2	9.0	33	45	50.9	0.18	3.6	9.6	37.4	10.5	50.8	Stretch
8	9.9†	9.5†	33‡	48‡	56.1‡	0.25‡	5.6‡	12.7‡	44.3‡	11.6‡	53.6‡	Plain
9			33‡	48‡	54.0‡	0.24‡	4.4‡	10.7‡	41.1‡	7.5‡	39.2‡	Stretch
10	9.9†	9.6†					3.7	10.3	36.1	14.9	63.4	Plain
11	9.8†	9.6†	32	44	47.1	0.19	2.8	8.1	34.5	10.0	48.7	Stretch
12	9.9†	9.7†					4.5	8.3	54.4	7.3	36.8	4″ lastex
13	9.5	9.4	—	—	31.2	0.26	5.4	7.6	72.0	3.7	18.4	Plain
14			—	—			5.7	9.6	59.2	4.8	23.5	"
15	9.4	9.2	—	—	29.7	0.23	5.4	7.1	75.4	4.8	21.3	"
16			—	—			5.7	7.8	73.8	5.2	24.3	"
17	9.4	9.3	—	—	39.1	0.24	5.4	7.0	77.4	3.4	17.0	"
18			—	—			5.6	7.9	71.0	4.9	20.2	"
19	9.5	9.3	35	46	42.8	0.18	3.2	10.5	30.8	15.0	62.9	Stretch
20	9.6	9.3	34	42	37.6	0.20	4.0	7.2	55.7	3.6	21.5	"
21	9.6	9.3	34	42	37.6	0.22	5.5	11.7	47.0	6.3	36.6	Plain
22	9.3	9.1	34	42	36.0	0.17	3.9	6.8	57.2	2.9	18.4	Stretch
23	9.6	9.2	33	42	33.2	0.21	4.0	5.4	75.0	3.6	16.7	"
24	9.5	9.1	—	—	33.6	0.21	5.8	10.3	56.9	5.8	31.4	Plain
25	9.2	9.1	—	—	31.5	0.20	4.8	9.3	52.2	5.6	29.4	"
26	9.1	9.0	—	—	25.5	0.14	5.2	12.0	43.5	8.5	42.4	"
27	9.3	9.1	34	41	36.2	0.16	5.0	10.2	49.1	6.8	35.6	Lace
28	9.3	9.1	34	41	35.6	0.15	4.1	6.2	66.2	6.4	25.5	"
29	9.0	9.0	34	41	36.4	0.20	4.5	7.9	57.4	3.7	21.3	"
30	9.5	9.1	—	—	25.1	0.20	4.4	9.4	46.6	5.8	30.5	Plain
31	9.2	9.0	—	—	26.9	0.16	4.4	9.4	47.0	7.2	34.9	"
32	9.9†	9.3†	33‡	52‡	39.6‡	0.21‡	4.3‡	9.4‡	45.6‡	19.5‡	77.9‡	"
33			33‡	51‡	40.2‡	0.22‡	3.6‡	11.1‡	32.4‡	13.1‡	56.8‡	Stretch
45-GAUGE												
34	9.5	9.3	—	—	34.6	0.19	4.2	8.0	52.0	5.2	27.3	Stretch
35	9.4	9.1	—	—	36.4	0.18	5.7	12.8	44.4	8.5	43.8	Plain
36	9.5	9.2	—	—	27.6	0.15	5.3	10.0	52.8	6.7	33.9	"
37	9.4	9.1	—	—	30.0	0.22	5.2	9.2	56.8	5.2	28.6	"
38	9.5	9.2	—	—	27.4	0.21	4.7	10.0	47.1	6.8	35.6	"
39	9.4	9.1	—	—	30.9	0.21	4.9	12.0	41.0	10.2	51.3	"
48-GAUGE												
40	9.6	9.4	37	44	56.6	0.21	4.9	6.2	78.8	3.2	17.0	Plain
41	9.6	9.4	37	46	57.7	0.25	5.2	8.1	63.7	5.8	26.0	"
42	9.7	9.5	37	44	57.8	0.27	4.9	7.2	67.8	3.9	20.4	"
43	9.7	9.4	37	44	52.0	0.26	4.1	7.7	53.8	6.9	29.3	"
GAUGE UNSPECIFIED*												
44	9.9†	9.5†	—	—	30.6‡	0.15‡	4.2	10.9	38.7	9.5	49.7	Plain
45	9.8†	9.8†	33‡	54‡	45.7‡	0.26‡	5.2	18.3	28.3	24.8	75.0	"

* Hose bought at retail.
† Average of only 10 hose.
‡ Average of only 4 hose.

erable plain area. However, no objective means of rating appearance is available for evaluating the effect of variables such as yarn number, gauge, and number of courses.

As the yarn number increases from 60/2 to 120/2, the bursting strength decreases. This is shown by an analysis of variance for hosiery styles 3, 5, 6, 19, and 20. All these hose were knit on 42-gauge machines from ring-spun yarns. The bursting-strength differences are highly significant.

The bursting strength also is dependent on the pattern stitch as shown by the tests on hosiery lots 20 to 31, inclusive, all of which were knit from the same lot of yarn on 42-gauge machines. Styles 26, 30, and 31 have average bursting-strength values of 26, 25, and 27 pounds, respectively, while the other eight styles are stronger, with values ranging from 32 to 38 pounds. Similarly for numbers 34 to 39, 45 gauge, knit from the same lot of 100/2 ply yarn, style 38 tested only 27 pounds, while style 35 tested 36 pounds. Style numbers 10 to 12 were knit 42 gauge from the same yarn as number 40, which was knit 48 gauge, and the bursting strengths are 47 and 57 pounds, respectively. These were knit with a plain stitch and are the only style numbers available for a gauge comparison.

In the test for elastic properties some of the hose yielded curves on which the stretch and recovery lines were quite close together, whereas on others the two were definitely separated. To measure this characteristic, the recovery load at 19.2 inches (r) was expressed as a percentage of the stretch load at the same circumference (s). For a straight stretch curve, s′-s was high, while for a slanting curve s′-s was low; that is, when s′-s is defined as the load required to stretch the hose one inch from 19.2 inches to 20.2 inches (CF in figure).

The tension that a hose exerts on a woman's leg after it has been repeatedly distended was measured by the value r. This ranged from 2.8 pounds for style 12 with a 4-inch lastex top to 7.1 pounds for style 2 with a plain welt. The ratio r/s varied from 28.3 per cent for style 45 to 78.8 per cent for style 40.

As shown in table 2, s varied from 5.4 pounds to 18.3 pounds. The United States Testing Company (*6*) has established a comfort rating for silk hosiery based on the s values as obtained in this test. According to that scale, hose with s values equal to 10, 11, or 12 rate "excellent," s equal to 8, 9, 13, or 14 as "good," s equal to 6, 7, 15, or 16 as "fair," and below 6 or above 16 as "unsatisfactory." On this basis, 15 of the 43 hose designed for the Bureau rate as "excellent," 15 as "good," 12 as "fair," and 1, style 23, as "unsatisfactory." Of the two styles purchased on the retail counter, 44 rated "excellent" and 45 as "unsatisfactory."

The load required to stretch the hose from 19.2 to 20.2 inches circumference (s′-s) has an even greater range of values than the load needed to stretch the hose to 19.2 inches (s). Style 22 had an s′-s value of 2.9 pounds while style 45 had 24.8 pounds. The maximum load to stretch the hose to 21.3 inches varied from 16.7 pounds to 77.9. The 16.7 value was found for the hose that rated unsatisfactory as indicated above.

Dissatisfaction with permanent distortion or bagginess of commercial hose has frequently been expressed by wearers. Using the change in width 8 inches below the top of the hose as a measure of the distortion produced by distending hose 2,000 times in the hosiery test, attempts were made to correlate distortion with the various values obtained in tests for elastic properties. In only one case was a relationship apparent, that of distortion versus s′-s. In the 56 hose measured for distortion, the correlation coefficient is 0.88, a highly significant value. Thus it is concluded that hose with a low s′-s value

will be distorted less than one with a high s′-s. Hose number 45, with a plain welt, has a higher s′-s value than any of the other hose tested. As may be seen from a comparison of style 8 with 9, 10 with 11, or 32 with 33, the s′-s value is higher for a plain top than for a stretch-top hose knit from the same lot of yarn. This indicates that, all other factors being equal, the amount of distortion might be reduced by the use of the stretch top.

Stretch-endurability, the number of times a hose can be stretched successively before it breaks, is still another means of evaluation. Of the styles reported in this study, number 32 failed at an average of 731 cycles, number 33 at 1068, number 8 at 1975, number 26 at 922, and numbers 44 and 45, the cotton hose bought retail, at 750 cycles. It may be noted here that styles 32 and 33 are identical in every respect except in construction of the welt. Number 32 had a plain top and 33 a stretch. All the other hose withstood at least 1,000 cycles, and styles number 2, 23, and 34 to 39, inclusive, tested after the procedure was changed to 2,000 cycles, did not fail in that longer period.

Relatively few hose showed any change in color when washed at 80°F., but at 110° and 140° many became lighter. The direct dyestuff in style 42 is objectionably faded even at 110°. This color change would probably not be a serious objection, but the bleeding of color indicates that unless cotton hose are dyed with a vat dye they should be washed separately. The colors used to dye these hose bleed into cotton, viscose, and silk, even at temperatures as low as 80°F.

All colors rated very good for resistance to dry crocking. Colors for styles 15, 17, 28, 29, and 41 rated fair in the wet-crocking test, and all other colors very good.

Style 2 became lighter when used with acid solution in the perspiration test, as did the direct dyestuff 42 when tested with alkali solution. The bleeding of the color is the real problem. Using the acid perspiration, silk was stained in 12 cases, viscose in 7, acetate in 4, cotton in 3, and wool in 5 cases. There was even more bleeding with the use of the alkali perspiration solution. Of the hose dyed with 4 different dyestuffs, only the direct, style 42, changed color or bled when tested for color permanence to perspiration.

When rated for fastness to light only the vat dye did not show a greater change than standard dyeing L5 as established by the American Association of Textile Chemists and Colorists. Colors for hosiery styles 13, 29, and 42 showed an appreciable change equivalent to standard dyeing L3 after 20 hours. All the others had an objectionable color change upon 20 hours exposure, some even as soon as 8 hours.

Only the vat dye withstood all tests for color permanence, and even it became lighter upon laundering and at 140°F. stained silk slightly. Styles 1 to 39 inclusive were commercially dyed, so that the class of dyestuff is unknown. Vat-dyed hosiery must be ingrain-dyed, since this class of dyestuff cannot be used for dip-dyeing. Since styles 1 to 6, 19 to 31, and 34 to 39, inclusive, were dip-dyed, vat dyes were not used on these items.

Summary. The 43 styles of especially designed hose analyzed in this study are in weights that are suitable for outdoor work, active and spectator sports, and street wear. The appearance of these hose is decidedly better than the usual circular-knit cotton hose, since all styles are full-fashioned and are knit from combed, mercerized, gassed yarns in attractive colors.

In lieu of serviceability studies, bursting strength and the test for elastic properties of hose are the best indicators of wearing quality. Bursting strength is found to depend on yarn number, gauge, and pattern stitch. Hose with stretch tops, when evaluated by the load required to stretch

hose from 19.2 to 20.2 inches circumference (s'-s) are more easily stretched than are the hose knit from the same yarn with a plain top. The reduced distortion and bagginess with a stretch top would give greater satisfaction in use. As measured by bursting strength and the hosiery test for elastic properties, the hose designed by the Bureau of Home Economics are equal to or better than the 2 styles of full-fashioned hose purchased on the retail counter.

This study shows that suitable cotton hose can be made in attractive colors with acceptable color permanence, that the stretch welt reduces the bagginess, and that certain designs will reduce the mottled effect often apparent in cotton hose and still have a reasonably high bursting strength.

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BOOKS AND PERIODICALS

NEW BOOKS

Human Nutrition (with Literature Cited). Reprint of Part I of the Yearbook of Agriculture, 1939, pp. 97–402 and 1075–1142. Washington, D. C.: U. S. Government Printing Office, 1940, 40 cents.

When the 1939 Yearbook of the U. S. Department of Agriculture, *Food and Life*, appeared with the first part devoted to human nutrition and the rest traditionally to the agricultural aspects of food production and distribution, it was immediately recognized as an invaluable reference book, and students of nutrition, gratified to see their subject at last given suitable recognition in a volume of this sort, wished that the sections on human nutrition could be made more generally available. This is now done by publishing them separately. The reprint contains twenty-odd papers on different aspects of the subject by specialists connected with the Department and shows how much American progress in nutrition owes to Department workers. Incidentally, the Yearbook marks the 50th anniversary of the establishment of the Department's work in nutrition under W. O. Atwater.

The Englishman's Food: A History of Five Centuries of English Diet. By J. C. DRUMMOND and ANNE WILBRAHAM. London: Jonathan Cape, 1939, 574 pp., 12s. 6d.

A scholarly compilation of facts about the production and quality of food, dietary habits and customs, and nutritive values of the diet in England from medieval times to the present. From 1600 on, the arrangement is by centuries, with modern scientific theories of nutritional adequacy introduced when the discussion first needs them rather than combined in a single place. With the help of the index, the book is a mine of information, though the style and arrangement do not adapt it to easy, casual reading.

Food Values at a Glance and How to Plan a Healthy Diet. By VIOLET G. PLIMMER. New York: Longmans, Green and Co., 1940, 190 pp., $2.

A somewhat popularized presentation of the material similar to that in *Food, Health, Vitamins* (noted in April 1933 and September 1939) in the preparation of which the author co-operated with R. H. A. Plimmer of the University of London.

Gardening without Soil. By A. H. PHILLIPS. New York: Chemical Publishing Co., Inc., 1940, 137 pp., $2.

What may and may not be expected from this recent innovation in horticulture, with informed, simple discussion of water culture, aggregate culture, nutrient solutions, and their use under various conditions. For either layman or scientist.

The Philadelphia Cook Book of Town and Country. By ANNA WETHERILL REED. New York: M. Barrows and Company, Inc., 1940, 346 pp., $2.50.

Recipes which seem to bear out the author's claim that Philadelphians have always known what good eating is and have combined on their tables the best of town and country resources. Unfortunately not for those who have to economize closely.

Around the World Making Cookies. By JOSEPHINE PERRY. New York: M. Barrows & Company, Inc., 1940, 157 pp., $1.50.

The author says this collection of recipes is the result of a hobby ridden all her life long and wherever she may have been. Part I is devoted to "Cookie Making in America—Colonial Times to the Present Day" and Part II to recipes gathered from eighteen foreign countries.

Growth and Development of the Young Child. By WINIFRED RAND, MARY E. SWEENY, and E. LEE VINCENT. *Third edition.* Philadelphia: W. B. Saunders Company, 1940, 462 pp., $2.75.

The authors of this widely used book for students and parents are, respectively, specialist in parental education, nutritionist, and psychologist at the Merrill-Palmer School. In revising it, they have retained the general order of presentation used in the 1930 and 1934 editions but now place somewhat more emphasis on family life as a factor in child development, treat habit formation in accordance with the present tendency against fixed patterns of learning, and introduce the material on biological development incidentally to the other topics discussed instead of in a separate chapter. All references have been brought up to date and the number of pages increased by about forty.

Annual Review of Physiology. Edited by JAMES MURRAY LUCK and VICTOR E. HALL. Volume II. Stanford University P. O., Calif.: American Physiological Society and Annual Reviews, Inc., 1940, 501 pp., $5.

Like the first volume (noted in September 1939), this yearbook provides brief summaries of the more important of the 1939 publications in various divisions of the field. Somewhat technical for the ordinary reader, it should be a valuable reference book for special workers.

The Fundamentals of Personal Hygiene. By WALTER W. KRUEGER. *Third edition, revised.* Philadelphia: W. B. Saunders Company, 1940, 304 pp., $1.75.

Another revision of a book whose earlier editions were noted in January 1933 and October 1936. Besides bringing the general subject matter up to date, this version gives more attention to posture, the care of the feet, cosmetics, syphilis, and food and health fads. Intended for both boys and girls of high school or junior college age.

Getting More Out of Life. By JOSEPH JASTROW. New York: Emerson Books, Inc., 1940, 312 pp., $2.

Another readable book based on the author's successful radio talks about how to improve one's efficiency and enjoyment by sensible application of psychological theory to one's everyday mode of living. Professor Jastrow, long one of the best known of American psychologists, has spent much time since his retirement from regular work in trying to make his science of wider popular use.

Artificial Light and Its Application. Commercial Engineering Department, Westinghouse Lamp Division, Westinghouse Electric & Manufacturing Company, Bloomfield, New Jersey, 1940, 296 pp., $1.25.

Although fairly technical, this "up-to-date source book" by experts of the company which publishes it is not beyond the grasp of college students and laymen and includes much useful information not commonly available, especially about newer developments. Chapters of special interest for home economics are perhaps "Color," "Interior Lighting Design," "School Lighting," "Home Lighting," "Farm Lighting," "Germicidal Radiations." Individual chapters may be purchased for 7 cents each. All orders should be addressed to the Advertising & Sales Promotion Department, Westinghouse Lamp Division, Westinghouse Electric & Manufacturing Company, 150 Broadway, New York City.

Real Estate Management: A Manual for Profitable Property Operation. By H. ROBERT MANDEL. New York: The Ronald Press Company, 1939, 218 pp., $4.

This book stresses the professional aspects of real estate management as it is now understood by the more progressive owners, agents, and managers. Many chapters should be helpful to home economics students of housing and institutional management.

Distinctive Clothes: How to Select and Make Them. By FRANCES H. CONSALUS, ANNA G. TIGHE, WILLIAM H. DOOLEY, and MAYER ROHR. New York: The Ronald Press Company, 1940, 517 pp., $2.40.

A home economist and specialists in sewing, textiles, and patternmaking have co-operated in writing this intermediate course in the "practice and technique of making stylish clothing."

The book follows the plan for the second-year textile course in the Course of Study and Syllabus in Textile Arts adopted by the New York City Board of Education and is a companion volume to the elementary *Attractive Clothes*.

Practical Dress Design: Principles of Fitting and Pattern Making. By MABEL D. ERWIN. New York: The Macmillan Company, 1940, 470 pp., $3.50.

The result of the author's attempt to develop basic principles by following which college students or indeed anyone possessed of some sewing ability and knowledge of art or good taste can develop skill in fitting and pattern-making. Many of the procedures are illustrated by clear and carefully thought out diagrams. Miss Erwin is head of the department of clothing and textiles at the Texas Technological College, Lubbock.

The Complete Book of Progressive Knitting. By IDA RILEY DUNCAN. New York: Liveright Publishing Corporation, 1940, 387 pp., $2.50.

If well-stated directions and clear diagrams are enough to teach one how to knit even so complicated an article as a fancy-stitch, made-to-special-measure garment, then any of us should be able to achieve that with the help of this book. The author is a teacher of adult homemaking classes at Wayne University.

The Good Old Days. By DAVID L. COHN. New York: Simon and Schuster, 1940, 597 pp., $3.75.

In this amusing "history of American morals and manners as seen through the Sears, Roebuck catalogs 1905 to the present," the author brings together a great many examples of the ways in which American tastes and habits have changed since the turn of the century but apparently without attempting to distinguish between more and less significant changes.

So You're Publicity Chairman. By FRANCES FISKE. New York: Whittlesey House, McGraw-Hill Book Company, Inc., 1940, 189 pp., $2.

"Practical pointers on how publicity should and should not be prepared for newspaper publication," intended for publicity workers in clubs, church organizations, and others who may not understand the requirements of newspapers.

Reading in General Education: An Exploratory Study. Edited by WILLIAM S. GRAY. Washington, D. C.: American Council on Education, 1940, 464 pp., $2.50.

Although educators in almost any field would profit from the entire volume, the sections of this report which would perhaps appeal most to home economists are: "Social Change, General Education, and Reading" by Neal M. Cross; "Relation of Reading to Other Forms of Learning," Edgar Dale; "Reading Interests and Tastes," Harold A. Anderson; "Diagnosis and Remediation," Ruth Strang; "Techniques of Appraisal," J. Wayne Wrightstone.

Adult Education Councils. By RUTH KOTINSKY. New York: American Association for Adult Education, 1940, 172 pp., $1.25.

The Worker's Road to Learning. By T. R. ADAM. New York: American Association for Adult Education, 1940, 162 pp., $1.25.

Nos. 20 and 21 in the series of "Studies in the Social Significance of Adult Education in the United States" which the American Association for Adult Education has been publishing with the aid of funds from the Carnegie Corporation of New York.

Medical Occupations for Girls: Women in White. By LEE M. KLINEFELTER. New York: E. P. Dutton & Co., Inc., 1939, 320 pp., $2.

An experienced writer of occupational books for young people here describes not only the medical profession as a career for young women but also such others as dentistry, dental hygiene, chiropody, dietetics, nursing, optometry, pharmacy, and various technical specialties connected with medical care. The facts are introduced in imaginary dialogues between practitioners of the different subjects and girls trying to decide what work they wish to prepare for; each chapter closes with a list of reference readings; and there are many pictures of people doing the kinds of work described.

ABSTRACTS

EDUCATION

Contributed by the Home Economics Education Service, United States Office of Education

GENERAL

Some of them had fun, L. ALLARD. *Childhood Educ.* **16,** No. 9 (May 1940) pp. 396–400.

Brief sketches of different types of teachers are used in discussing the matter of leisure time for teachers. It is suggested that every teacher has the right to time for some chosen activity which has nothing to do with earning her daily bread.—R. V. H.

An experiment in responsible learning, W. S. LEARNED and A. R. HAWKES. *Educ. Digest* **5,** No. 8 (April 1940) pp. 26–31; reported from the 34th Annual Report of the Carnegie Foundation for the Advancement of Teaching, 1939, pp. 45–75.

The report of an experiment undertaken in three Pennsylvania high schools by members of the regular staff. "The underlying aim of the program was, if possible, to replace the course 'unit,' the 'credit,' and the 'mark' as dominating the pupil's mind, with a healthy interest in the meaning of ideas and the ability to use them intelligently."—M. W.

The principal and the teacher, W. MCCLURE. *Educ. Digest* **5,** No. 9 (May 1940) pp. 19–21; abstract of an address made before the American Association of School Administrators, St. Louis, Mo., Feb. 29, 1940.

The writer discusses what is required for education to develop a nation of individuals disciplined by social conscience. The importance of co-operative effort in centering attention on the solution of problems and the growth of children is discussed, and examples are given of efforts made by some teachers and principals. —M. W.

Interpretations of guidance. *Educ. Method* **19,** No. 6 (March 1940).

This entire issue is devoted to the subject of guidance, which is discussed by seven writers.—M. W.

Education for the wise utilization of resources, P. R. HANNA and H. C. HAND. *Frontiers of Democracy* **6,** No. 52 (March 15, 1940) pp. 176–179.

The task of awakening a vast army of professional workers in schools and colleges to the imperatives of contemporary American welfare and the role of education in improving the common lot is outlined. The need is indicated for workers in education to be sensitive to the central role of the school in a democracy, aware of the inventory of the earth's storehouse and the human resources for shaping and utilizing these resources, and cognizant of the part that balance through planning would play in achieving cultural improvement and stability. Earning experiences of school and college youth must be provided to expose them to economic facts and create in them the skills, concepts, and attitudes essential to the task ahead.—S. M. B.

Opportunities of American women in education and the professions, W. GOODSELL. *Frontiers of Democracy* **6,** No. 53 (April 15, 1940) pp. 214–216.

A study of opportunities of American women in education and the professions which reveals that higher institutions have a long road to travel before equality of opportunity is offered to women. The conclusion is that equality of opportunity must wait on profound social change.—S. M. B.

Women, education and democracy, D. C. FISHER. *J. Am. Assocn. Univ. Women* **33,** No. 3 (April 1940) pp. 131–136.

The problem of the "road to regeneration" which women of today are exploring is presented as a challenge to educators. It is pointed out that "every attempt in the modern world to lessen the opportunities for women to grow to complete maturity should be instantly resisted—not by feminists keeping up the old-fashioned fight for their 'rights,' but by everyone with ordinary sense enough to see in such

attempts a steadily flanking attack on the principles of democracy."—R. V. H.

Evaluating evaluation, P. T. ORATA. *J. Educ. Research* **33,** No. 9 (May 1940) pp. 641–661.

Attention and critical comment are directed to the shift in emphases from measurement to evaluation and the assumptions underlying the new movement. The conclusion is that evaluation as now practiced has a long way to go before there can be justification for associating it with new school practices.—S. M. B.

An effort to extend the measurement of the results of schooling into the social and economic fields, H. F. CLARK and M. F. SEAY. *J. Educ. Research* **33,** No. 9 (May 1940) pp. 685–691.

A report of the techniques involved in measuring the extent to which schools can improve the diet of a community. A technique was experimentally set up that used the available organization and personnel and changed the mechanics of the school as little as possible. It is believed that the results of such studies will provide the only sound basis for the support of education in the future.—S. M. B.

Home as the place for learning democratic living, G. LANGDON. *Progressive Educ.* **17,** No. 4 (April 1940) pp. 247–250.

Suggestions for daily home living through which the ways of democratic living can be experimented with, evaluated, and refined, and family experience made a venture in learning for young and old alike.—S. M. B.

What are the effects of a democratic atmosphere on children? G. WATSON. *Progressive Educ.* **17,** No. 5 (May 1940) pp. 336–342.

To answer the question "What difference does it make whether a teacher is a dictator, a democrat, or only an ornament?" a series of experiments was undertaken at the University of Iowa, and the results suggest certain general truths which apply to all group life. In the light of this evidence, it is inconceivable that any teacher or leader who genuinely seeks democratic goals will find it "too much trouble" to use the instrument of democratic, co-operative planning.—S. M. B.

Eight years' experience with a teacher education program, A. H. LAND. *School & Soc.* **51,** No. 1311 (Feb. 10, 1940) pp. 182–186; abstracted in *Educ. Digest* **5,** No. 7 (March 1940) pp. 27–29.

The author gives a progress report of the development of a teacher-education program in which all the study of education proper and professional preparation for teaching is organized into a unified whole in the last year, the organization being a divisional rather than a departmental one.—M. W.

The teacher-pupil relationship in a democracy, A. GESELL. *School & Soc.* **51,** No. 1312 (Feb. 17, 1940) pp. 193–198; abstracted in *Educ. Digest* **5,** No. 8 (April 1940) pp. 43–45.

"The fundamentals of democracy have to do with spirit and attitudes, as well as information." The writer discusses four components of an adult-child relationship from the standpoint of mental hygiene.—M. W.

An analysis of core curriculum programs, E. M. DRAPER. *Univ. of Wash. Coll. of Educ. Record* **6** (Dec. 1939) pp. 17–25; abstracted in *Educ. Digest* **5,** No. 7 (March 1940) pp. 45–48.

Examples of ways in which the core curriculum principle may receive practical application are given, followed by a few generalizations on organization of a core curriculum.—M. W.

COLLEGE

The selection of students for the profession of teaching, M. E. TROYER. *J. Educ. Research* **33,** No. 8 (April 1940) pp. 581–593.

A description of the systematic methods followed at Syracuse University in selecting students for the profession of teaching. Data are presented on the effectiveness of the methods used.—S. M. B.

The problem of handling controversial issues, D. M. KEEZER. *J. Higher Educ.* **11,** No. 3 (March 1940) pp. 115–124.

Conflicting opinions and the formulation of a point of view as to what college teachers should do in dealing with controversial issues in relation to social problems. Not converts to the teacher's opinions but critically minded

students capable of forming their own opinions seem to be the objective of desirable college teaching.—S. M. B.

A community program in the laboratory school of a state teachers college, O. G. JAMISON and members of the staff of Indiana State Teachers College, Terre Haute. *Progressive Educ.* **17,** No. 5 (May 1940) pp. 327–335.

A report of the ways in which a social survey of a school district was used as the basis for the development of the school program at the Laboratory School of Indiana State Teachers College. Emphasis was placed on determining the needs of pupils through home visitation and on building a curriculum which would help them to adjust to the home environment. A dual responsibility was recognized: on the one hand, to the children and parents of the district, and on the other, to the college students who would carry to other schools the professional understanding received at the college.—S. M. B.

Group work with youth as part of teacher education, R. T. GREGG. *Progressive Educ.* **17,** No. 5 (May 1940) pp. 358–361.

A description of a plan for providing more realistic contacts with young people as a part of the training of teachers. Student-teacher participation in nonschool adolescent groups under a carefully planned program gives opportunity to gain adequate understanding of the physiological, sociological, and psychological development of adolescents.—S. M. B.

SECONDARY

Student-council handbook. *Bull. Natl. Assocn. Secondary-School Principals* **24,** No. 89 (March 1940).

Student councils and student participation in school government are rapidly becoming an integral part of the school life of secondary school pupils. This issue takes the form of a handbook for student councils and brings together materials and suggestions applicable and helpful to schools both large and small.—M. W.

The secondary school's dilemma, P. CUTRIGHT. *J. Am. Assocn. Univ. Women* **33,** No. 3 (April 1940) pp. 141–144.

Illustrations are given of the types of criticism directed toward the average American high school. It is suggested that progress may be made in helping educators meet these problems through the organization of co-ordinating councils.—R. V. H.

Use of interest inventories for personality study, G. V. SHEVIAKOV and J. FRIEDBERG. *J. Educ. Research* **33,** No. 9 (May 1940) pp. 692–697.

A report of attempts to measure adjustment through the use of interest inventories carried on in connection with the work on evaluation in the Eight Year Study of the Progressive Education Association. The approach outlined aims to bring to light certain common trends in the individual which are indicated by both his academic interests and his other activities. "Should it become possible to give a classroom teacher an instrument which will enable her to relate the strivings and the goals of a student and the possible satisfactions of these goals to work on certain academic problems, the opportunity to make education truly meaningful and helpful to children will be increased greatly."—S. M. B.

Knowing high school students better, W. M. AIKIN. *Progressive Educ.* **17,** No. 3 (March 1940) pp. 171–174.

Suggestions as to ways some schools have found to break down injurious departmental organization and meet the needs of individual students more effectively. Less emphasis on formal, organized classroom work and more on the study of young people as human beings and more examination of the results of teaching will lead to much more profitable experience for students in high school.—S. M. B.

FOOD COMPOSITION

Contributed by the staff of the Nutrition Section, Bureau of Home Economics, United States Department of Agriculture

The sulphur content of foods, M. MASTERS and R. A. MCCANCE. *Biochem. J.* **33,** No. 8 (Aug. 1939) pp. 1304–1312.

About 300 foodstuffs were analyzed for sulfur. Fresh, cooked, canned, and dried foods were studied, many of them common in American markets. The sulfur ranged from 0.45 mg. per 100 gm. for sago to 5,460.0 for dried carrageen moss. For most of the fresh fruits it was below 30 mg. and for most fresh vegetables below 100 mg. The meats varied from about 78 to 395 mg. per 100 gm. Analyses made before and after drying indicate that some vegetables contain volatile or potentially volatile sulfur compounds lost on drying.

The calcium content of white bread, W. W. PROUTY and W. H. CATHCART. *J. Nutr.* **18,** No. 3 (Sept. 10, 1939) pp. 217–226.

Calcium, ash, and moisture determinations were made on 39 commercial and 11 experimental lots of white bread. The experimental loaves were prepared with varying quantities of dried skim milk in one series and of whole dried milk in the other. To each 100 parts of flour, 0, 2, 4, 6, 8, 10 parts of the milk powder were added. The commercial loaves were sent by 33 bakeries from 27 states to represent their "most popular white bread." On a moist basis, at 38 per cent water, the calcium in the experimental loaves ranged from 0.025 per cent in bread made without milk to 0.097 per cent in bread made with 10 parts dried skim milk. In the commercial loaves, on the same moisture basis, the calcium varied from 0.048 to 0.145 per cent, with an average of 0.080 per cent.

Oxalic acid in foods and its behavior and fate in the diet, E. F. KOHMAN. *J. Nutr.* **18,** No. 3 (Sept. 10, 1939) pp. 233–246.

Calcium, oxalic acid, and total solids were determined in 57 vegetables and 37 fruits. Average values are given in cases where more than one sample were analyzed. Calcium on the fresh basis ranged from 0.0019 per cent in sweet cherries to 0.55 in leaves of celery. Oxalic acid (anhydrous) was highest, 1.11 per cent, in lamb's-quarters. The only other foods that the author considered as high in oxalic (above 0.4 per cent) were spinach, Swiss chard, New Zealand spinach, beet tops, poke, purslane, and rhubarb. This acid was absent in several fruits and vegetables. Rat-feeding experiments indicated that spinach supplies no available calcium and impairs utilization of some calcium from other foods.

The availability of the iron in dried peas and beans, L. ASCHAM, M. SPEIRS, and D. MADDOX. *Science* **90,** No. 2347 (Dec. 22, 1939) pp. 596–597.

The iron content in mg. per gm. of six samples of peas and beans dried at 60° to 65° C. varied from 0.053 for green split peas and yellow split peas to 0.087 for black-eyed peas. Because of a typographical error in the decimal point, the value for the butter beans as given is ten times too high. The iron in these foods appeared to be completely available to the nutritionally anemic rat for the regeneration of hemoglobin.

The mineral content of the edible portions of some American fishery products, H. W. NILSON and E. J. COULSON. U. S. Dept. Commerce, Bur. of Fisheries, Investigational Rept. No. 41 (1939) 7 pp.

Average values for solids, calcium, magnesium, phosphorus, iron, copper, and iodine are given for the edible portion of 8 species of fresh fish and for 5 samples of canned salmon, 3 of fresh oysters, 1 each of raw and boiled shrimp, and 2 of crab meat. Most of the iron, copper, and iodine values have been calculated from individual analyses published in earlier reports of the Bureau. With the exception of the fresh fish, the products studied are rich sources of all the minerals determined. Because of the inclusion of some of the soft bones, the canned salmon are excellent sources of calcium.

P. R. A.

FOOD ECONOMICS AND DIETARY REQUIREMENTS

Contributed by the staff of the Food Economics Section, Bureau of Home Economics, United States Department of Agriculture

Production, purchase, sale, and use of specified foods on Alabama farms, B. T. INMAN. Agr. Expt. Sta., Ala. Polytech. Inst., Circ. 81 (Nov. 1939) 31 pp.

This study was made to determine the amounts of food products produced, purchased, and consumed on farms, and methods of improving the farm diet. Data were obtained from production and disposition reports of the Bureau of Agricultural Economics and from business records of 816 farms selected to represent color and tenure groups in various areas. The proportion of food products raised that were also consumed on the farm was: 83 per cent of the hogs; 8 per cent of the cattle and calves; 70 per cent of the poultry; about 50 per cent of the fruit; and 85 per cent of the garden and truck crops. The purchases of food products that are adapted to production in Alabama were valued at $50 a family in 1935 and represented about 50 per cent of all food purchases. Farm records indicated that the production of vegetables is very seasonal and lacking in variety. The proportion of farmers who canned or stored fruits or vegetables was very low. The average diet furnished larger quantities of foods rich in carbohydrate and smaller quantities of those high in protein than are suggested for a minimum-cost adequate diet. Vegetables were usually produced in sufficient quantities but not well distributed through the year.

The challenge of under-consumption. Fed. Surplus Commodities Corp., U. S. Dept. Agr. GI—1 (Feb. 1940) 24 pp.

Major causes of farm surpluses are (1) technological improvements resulting in greater efficiency in production, (2) dislocations in foreign trade, and (3) industrial unemployment, bringing about underconsumption. Recent studies of family food consumption in relation to income have shown that there is great underconsumption of many farm products at low-income levels, and that as incomes rise the consumption of these foods—fruits and vegetables, dairy products, meat, and eggs—increases markedly. The results indicate that low-income families (and 42 per cent of all families had incomes under $1,000 in 1935–36) constitute a potential market for agricultural commodities. Among the many programs in the U. S. Department of Agriculture for dealing with farm surpluses, the food stamp plan is one which offers considerable promise. Other programs include direct distribution of commodities to families in need, to certain charitable institutions, and to schools participating in the school-lunch program; government subsidies to divert surpluses into domestic outlets; and export subsidies. The importance of overcoming unemployment and underconsumption cannot be overestimated.

Survey of the human nutrition problem under present conditions, E. GASSER. *Intern. Rev. Agr.* **31,** No. 2 (Feb. 1940) pp. 53T–69T.

The human nutrition problem is here discussed in terms of the various essential nutritive substances and the quantities of each that should be included in the daily diet. In normal times exchange of foodstuffs between countries has enabled large population groups to have a varied and fairly adequate diet. In wartime, however, it becomes the responsibility of governments to ensure the minimum of food necessary for the maintenance of health. Countries must learn to substitute foods which they can produce for foods which they formerly imported. For example, potatoes may replace wheat or other grains as a cheap source of carbohydrate. Where there is a shortage of fats, it is possible to recover large quantities from waste and bones; synthetic fats can now be used in the industrial field, thus releasing the full supply of vegetable and animal fats for human nutrition. For a shortage of proteins, two possible remedies have been suggested: (1) production of synthetic protein from yeast and (2) production of a larger quantity of proteins by increasing stock breeding and by feeding animals on optimum fodder. Special care must also be taken to provide the necessary minerals, including sodium and

chlorine in the form of common salt, which is used everywhere but is not produced in each country. Since the absence of any one of the vitamins may lead to a deficiency disease, every effort must be made to conserve the natural supply of each and to augment it when necessary from sources not usual in family diets.

The food problem in Egypt, W. H. WILSON. *J. Egyptian Med. Assocn.* **22,** No. 6 (June 1939) pp. 283–318.

The food problem is here discussed from the following points of view: the quantity and nature of the food materials available in Egypt for human food; whether the available food supply would produce an adequate diet for the population if distributed in accordance with known human requirements; whether there is any evidence of malnutrition; whether the poorer classes in the towns can afford to purchase sufficient and adequate food at current prices. The statistics of production indicate that the quantities of cereals and legumes raised for food are sufficient for the existing population, but there is a deficiency of protective foods. Appropriate measures should be taken to increase the production and encourage the consumption of meat and milk and lower the price and improve the distribution of milk so as to make it available to children of the poorer classes. There is evidence of widespread undernourishment among the people of Egypt; rickets and pellagra are common. The food problem is most acute among the poorer wage earners in towns and results from a disparity between wages and the cost of food, especially bread and cereals.

Agricultural surpluses and nutritional deficits: a statement of the problem and some factors affecting its solution, O. V. WELLS. *J. Farm Econ.* **22,** No. 1 (Feb. 1940) pp. 317–323.

Agricultural surpluses are described in terms of the extremely low incomes received by ⅓ to ¼ of the agricultural population who are inadequately employed and by the millions of acres of good land held out of production in an attempt to adjust supply to demand. A potential market for at least some of the surpluses exists among the many families that fail to obtain adequate diets either because they spend too little or because of unwise selection of foods. Frequently diets are poor because of too small a quantity of protective foods. To obtain substantial nutritional improvement, a national consumption of 10 to 20 per cent more milk and butter, at least 20 per cent more tomatoes and citrus fruit, and about double the current quantity of leafy, green, and yellow vegetables would be needed. The acreage required to produce these would be 5.5 per cent greater than the present one. A still larger one would be needed if low-income families could obtain increased purchasing power and buy larger quantities of nearly all foods. An effective educational program and an increasing national income will both work toward nutritional improvement, but to increase food consumption among low-income families is a serious problem.

School meals in wartime, C. F. BROCKINGTON. *Pub. Health* **53,** No. 7 (April 1940) pp. 153–156.

School meals should be planned to make up the quantities of essential nutrients most likely to be lacking at home. There is no general agreement as to the amount of each nutrient a child's diet should contain, although more is probably known of needs for minerals than for vitamins. For comparative purposes a child's daily requirements are tentatively suggested as follows: animal protein, 50 gm.; calcium, 1 gm.; phosphorus, 1 gm.; iron, 15 mg.; vitamin A, 6,000 I.U.; vitamin B_1, 500 I.U.; vitamin B_2 (riboflavin), 540 Sherman units; vitamin C, 600 I.U.; vitamin D, 800 I.U. It is estimated that three pints of whole milk per child per day would furnish the entire requirement for protein, calcium, phosphorus, and vitamin B_2 and a large proportion of the other requirements. Obviously this quantity of milk would not be practicable. A more feasible suggestion involves the use of dry skim milk, which is cheap and can be incorporated into many recipes. If liberally used, this food alone would do much for the nutritional well-being of school children.

E. F. P.

FOOD UTILIZATION

Contributed by the staff of the Food Utilization Section, Bureau of Home Economics, United States Department of Agriculture

Freezing makes beef tenderer, O. G. HANKINS and R. L. HINER. *Food Ind.* **12,** No. 1 (Jan. 1940) pp. 49–51.

Four pairs of beef short loins from four animals were used in the experiment described. After being stored, following slaughter, for four days at 34°F., each loin of a pair was divided into eight steaks 1½ inches thick. Four steaks from each animal were set aside as controls, cooked to the rare stage (140°) at 392°F. oven temperature and tested for tenderness by means of the shearing-strength device developed by the Bureau of Animal Industry. The other steaks from that animal were placed in freezers, four each at 20°, −10°, and −40°F. When frozen uniformly the steaks were thawed and then cooked and tested for tenderness by the method used on the controls. Data are presented showing the plan of the experiment, the weights of the steaks when fresh, frozen, and thawed, and the average shearing strength in pounds according to different temperature conditions. Also, data are presented for an analysis of variance in tenderness of the steaks. Among other conclusions the authors state: "It is concluded that freezing steaks at +20°, −10°, and −40°F. did materially increase their tenderness over that of unfrozen steaks; also that −10° and −40° had significantly more tendering effect than +20°. There was no real difference in effect between the two lowest temperatures and, therefore, −10° would seem the more economical and practical for this particular purpose."—L. M. A.

Processing and thiamin, A. ARNOLD and C. A. ELVEHJEM. *Food Research* **4,** No. 6 (Nov.–Dec. 1939) pp. 547–553.

Samples of beef kidney, beef-lung tissue, beef spleen, hog muscle, and a meat food product containing a small amount of grain were used in an investigation of the stability of thiamin under several conditions of processing. The smallest quantity of material necessary to protect all of a group of three or four chicks from polyneuritis was used as the basis for the calculation of the antineuritic activity according to the method of Arnold and Elvehjem. During processing for two hours at 240°F., the thiamin content of beef kidney decreased from 15.0 to 3.0 micrograms per gram, that of beef-lung tissue from 6.0 to less than 1.5 micrograms per gram, and that of beef spleen from 6.0 to 1.7 micrograms per gram, losses of between 70 and 80 per cent. This was in agreement with the results obtained in the assays on the control and canned samples of the meat food product. The latter decreased in antineuritic activity by about 60 per cent in one hour of processing at 240°F. and 70 per cent in two hours at the same temperature. Hog muscle processed for one hour and 50 minutes at 250°F. decreased in thiamin content from 20.0 to less than 4.0 micrograms per gram, a loss in activity of over 80 per cent. The same loss in activity was shown by the meat food product under the same conditions of processing. Thus, thiamin seems somewhat more labile to an increase in temperature than in time of processing.—L. A. R.

Vitamin values of garden-type peas preserved by frozen-pack method. *Food Research* **4,** No. 6 (Nov.–Dec. 1939).

II. Vitamin A, E. N. TODHUNTER, pp. 587–592.

These studies are a continuation of one by Todhunter and Sparling previously abstracted [see JOURNAL **31,** No. 5 (May 1939) pp. 343–344]. The same frozen-pack Telephone peas for which the ascorbic acid content was given previously were analyzed for vitamin A content by the biological method. In this case the value was not influenced by differences in the temperatures and times of scalding before freezing. Frozen-pack Telephone peas contained 10 International Units of vitamin A per gram, and the concentration of the vitamin was the same in both skin and cotyledon. Tall Alderman peas frozen-packed dry or in brine contained 13 I.U. of vitamin A per gram, and Dwarf Alderman peas 14 I.U. per gram. The latter lost no vitamin A when cooked by boiling.

III. Thiamin (vitamin B_1), M. L. FINCKE, pp. 605–611.

In Part III the frozen-pack Telephone peas were assayed for vitamin B_1 content by the rat-growth method. The highest value, 4 micrograms per gram, occurred in peas blanched at 71°C. for two minutes. There was a trend toward a lower thiamin content when the peas were scalded for longer times and at higher temperatures, but the difference was statistically significant only for the peas blanched for two and three minutes at 99°C. These contained 2.6 micrograms of thiamin per gram. No significant difference in value was found between peas blanched in steam or hot water at the same temperature and for the same length of time. Holding the peas at room temperature for four or eight hours after vining and before freezing did not affect the thiamin content. Different varieties of peas grown under the same soil and climatic conditions and processed by the same method before freezing varied widely in thiamin content. Asgrow 40, World Record, Alderman, and Rogers 95 were highest, with thiamin contents of 6.5 to 7.4 micrograms per gram. Extra Early Gradus, Stratagem, and Confidence varieties contained between 4.3 and 5.2 micrograms per gram, and Laxton's Progress was lowest, with 2.0 micrograms per gram.—L. A. R.

Whey solids in candy, B. H. WEBB and C. F. HUFNAGEL. *Food Research* **5,** No. 2 (March–April 1940) pp. 185–195.

Experimental work has shown that whey solids can be used in candy to replace part of the skim milk solids, sugar, and, to a lesser extent, corn sirup. Directions are presented for making various types of whey candy, including formulas which utilized the whipping properties of sweetened condensed whey.—E. F. W.

Soybean flour as an emulsifying agent in preparation of salad dressings, B. M. WATTS and L. MORSE. *Food Research* **5,** No. 2 (March–April 1940) pp. 197–203.

Benzine-extracted, undenatured soybean flour, heated with water, was successfully used as an emulsifying agent in the preparation of salad dressings. The relative viscosity of the soybean dressings was much greater than those from either egg yolk or egg white, making possible the preparation of inexpensive salad dressings containing a low amount of oil, with the soybean flour as the sole emulsifying and thickening agent.—E. F. W.

Effect of cooking upon the thiamin content of foods, E. AUGHEY and E. P. DANIEL. *J. Nutr.* **19,** No. 3 (March 1940) pp. 285–295.

Thiamin losses due to different cooking procedures were determined by the rat-growth method for a variety of foods at different levels of vitamin B_1 content. Carrots and navy beans boiled in water lost no thiamin. In other vegetables similarly prepared, thiamin destruction varied between 9 and 22 per cent, while additional amounts of 8 to 14 per cent were extracted by the cooking liquid. The presence of a small quantity of sodium bicarbonate increased thiamin destruction from 9 to 22 per cent in green peas and from 18 to 59 per cent in snap beans but had no effect on the thiamin content of boiled navy beans. Roasting pork loin destroyed 43 per cent of the thiamin present, while braising destroyed only 15 per cent. Double-boiler cooking of whole-grain cereals did not destroy thiamin; baking bread caused about 15 per cent loss of this vitamin. Of practical interest are values for the average cooked weight of 100 gm. of raw food and the thiamin content per 100 gm. of cooked food. Because of water absorption, whole-grain cereals and dried legumes furnish a much smaller amount of thiamin per serving than is ordinarily supposed. Braised and roasted lean pork loin containing 550 International Units and 400 I.U. of thiamin per 100 gm., respectively, are excellent sources of this vitamin. Good sources of vitamin B_1 are boiled green peas containing 124 I.U. of thiamin per 100 gm., whole-wheat bread with 100 I.U. per 100 gm., boiled navy beans with 75 I.U. per 100 gm., and baked potatoes with 50 I.U. per 100 gm. Boiled potatoes and spinach with a thiamin content of about 35 I.U. per 100 gm. rank with whole-wheat and oat cereals. Snap beans as they are usually eaten have seeds so immature as to make this vegetable a poor source of vitamin B_1.—L. A. R.

NUTRITION

Contributed by the staff of the Office of Experiment Stations, United States Department of Agriculture

Mineral Metabolism

The calcium requirement of older male subjects, E. C. Owen. *Biochem. J.* **33,** No. 1 (Jan. 1939) pp. 22–26.

Ten male subjects ranging from 32 to 69 years of age, with 6 over 50 years, participated in a number of 3-day calcium and phosphorus balance studies. In these, two different levels of calcium intake were used, one averaging 524 mg. and the other 879 mg. daily; the corresponding average phosphorus levels were 849 mg. and 1,227 mg. The calcium and phosphorus balances, calculated from intakes and total excretions, were half negative and half positive on the lower calcium intake, the average being −4 mg. On the higher calcium level the balances were all positive, averaging +152 mg. per day. From the results obtained the minimum requirements of calcium and phosphorus were estimated as approximately 520 and 1,200 mg. per day. The value for calcium agrees well with Sherman's estimate of 450 mg. per person per day and the 550-mg. estimate of Leitch for adult, nonpregnant lactating women; the value for phosphorus exceeds the 900-mg. estimate of Sherman but is similar to figures reported in various reviews in the literature. Since the results of the present study are similar to other reported estimates for adults, it is concluded that the calcium requirements of older males are much the same as those of younger adults, and that consequently the effects of long subjugation to a diet low in calcium are not offset by increasing age. It is considered possible, therefore, that senile osteoporosis may be related to long-standing calcium deficiency.

The retention of calcium and phosphorus by pre-school children, H. B. Pierce, R. G. Daggs, A. B. Meservey, and W. J. Simcox. *J. Nutr.* **19,** No. 4 (April 1940) pp. 401–414.

This Vermont study was planned to compare milk and wheat farina fortified with an alkaline salt mixture (apparently disodium and tricalcium phosphates) as sources of calcium and phosphorus for preschool children. Calcium and phosphorus metabolism studies were conducted on 10 children in two groups evenly matched as to weight, age, and sex. After a preliminary period with calcium and phosphorus supplementation to eliminate the effects of any previous calcium depletion, the experimental periods (5 weeks) were begun. The one group was given the basal diet only, the other group the basal diet so modified as to replace 200 mg. of the milk calcium with 200 mg. of calcium from the fortified cereal. The basal diet itself furnished 50 mg. of calcium per kilogram of body weight per day, 80 per cent of this amount supplied by milk. After an intermediary period of 2 weeks with a reduction in calcium intake, the experiment was repeated with reversal of the groups as to dietary treatment. The data on calcium and phosphorus metabolism indicated that the utilization of calcium and phosphorus, as measured by retention during the test periods, was equally good whether these minerals were furnished by the milk or in part by the cereal fortified with tricalcium phosphate. The two groups showed similar retentions over the 6-month period, the average being 11 to 12 mg. for calcium and 7 to 8 mg. for phosphorus per kilogram of body weight per day. These represented retentions of about 19 per cent of the ingested calcium and 11 per cent of the phosphorus. For maximum retention of calcium it was necessary for the diet to furnish a daily intake of over 700 mg. of this element. Since this value is somewhat higher than values from similar studies reported in the literature, it is suggested that the severity and length of the Vermont winter, with the limitation of sunshine, might have necessitated more calcium than would be required for the retention in more moderate climates.

Phytic acid and the rickets-producing action of cereals, D. C. Harrison and E. Mellanby. *Biochem. J.* **33,** No. 10 (Oct. 1939) pp. 1660–1680.

In these studies with puppies on a basal diet of a type producing slight rickets or just pre-

venting it, the rickets-producing effect of a number of supplementary substances was studied. The effect of these substances was followed by observations on the radiographic appearance of the epiphyseal ends of the bones and on the degree of bone calcification. Commercial phytin (CaMg phytate) was found to have a slight antirachitic influence and to improve calcification, but phytic acid or sodium phytate or oatmeal in amounts to furnish an equivalent quantity of phytic acid all exerted a powerful rickets-producing effect. This rachitogenic action could be abolished, however, by the addition of extra calcium to the diet. The effect of these calcium salts and of the CaMg phytate suggested that the rachitogenic action of cereals is due not, as has often been suggested, to the unavailability of their phosphorus, but to the action of the phytic acid they contain in forming insoluble calcium phytate in the intestinal tract, thereby preventing the absorption of the calcium. Oatmeal, it is pointed out, contains sufficient phytic acid to precipitate the calcium from the cereal itself, as well as further amounts from the rest of the diet. It is considered, however, that the rachitogenic action of cereals is likely to be operative only in diets that are on or below the borderline of minimum requirements of calcium and vitamin D. In practice the effect would be overcome by increasing the calcium rather than the phosphorus intake.

Radioactive iron and its metabolism in anemia: its absorption, transportation, and utilization, P. F. HAHN, W. F. BALE, E. O. LAWRENCE, and G. H. WHIPPLE. *J. Exptl. Med.* **69,** No. 5 (May 1939) pp. 739–753.

Earlier experiments on the absorption, storage, and utilization of iron in dogs were repeated, using radioactive iron administered by mouth. Following the course of this labeled iron by analytical procedures developed for the purpose, it was observed that a fair quantity passed from the gastrointestinal tract into the blood stream whenever there was a definite need for iron, as in anemia; when there were ample body reserves, however, the absorption was negligible. In either case the excretion of iron was very slight. Absorption of the iron in these anemic dogs took place largely from the small intestine, with no significant absorption from the colon. The absorbed iron was found to be transported in the blood plasma from the intestinal tract to the point at which it was used.

Radioactive iron and its excretion in urine, bile, and feces, P. F. HAHN, W. F. BALE, R. A. HETTIG, M. D. KAMEN, and G. H. WHIPPLE. *J. Exptl. Med.* **70,** No. 5 (Nov. 1939) pp. 443–451.

Dogs, in various states of iron storage and depletion, were used in these experiments, which continued the work noted above. Radioactive iron as ferrous gluconate was given by intravenous injection in quantities of 100 to 250 mg. daily, and the excretion in the urine, bile, and feces was followed. For a few days after the iron injection there was an initial extra output in the urine and feces amounting in some instances to from 2 to 8 per cent of the injected iron. Then the urinary excretion dropped to traces or even nothing, although measurable amounts, from 0.05 to 0.4 mg. per day, were found in the feces. These amounts came from the bile which normally enters the intestines by way of the biliary tract. These very low excretions of the injected iron indicated that the body tends to excrete only very little iron, most of it being stored. This evidence is considered to favor the theory that the body controls its iron stores by absorption or lack of it, rather than by its capacity to eliminate iron.

Hemoglobin production in anemia limited by low protein intake: influence of iron intake, protein supplements, and fasting, P. F. HAHN and G. H. WHIPPLE. *J. Exptl. Med.* **69,** No. 2 (Feb. 1939) pp. 315–326.

Dogs made anemic by bleeding and permitted a low protein intake were observed over a long period during which iron was administered orally and intravenously. With iron alone, whether given by mouth or by intravenous injection, these dogs could not produce the expected new hemoglobin when the protein intake was held at low levels. With increase in the protein intake hemoglobin production was improved and the proteins of salmon muscle, bananas, and carrots were found to be well

utilized for hemoglobin formation. These experiments are considered to indicate that the potency of liver in anemia caused by hemorrhage is due not alone to the iron content of the liver but in part also to the protein.

Iron deficiency anemia in children, O. D. ABBOTT and C. F. AHMANN. *Am. J. Diseases Children* **58,** No. 4 (Oct. 1939) pp. 811–816.

Hemoglobin values were determined in 883 children in Florida, 620 of them in grades 1 to 3 at school, and 263, mostly from very poor families, in nursery schools. Hemoglobin was determined with the Dare hemoglobinometer (13.77 gm. per 100 cc. = 100 per cent); values as low as 9.64 gm. (70 per cent) were considered indicative of anemia and those below 11.70 gm. (85 per cent) as subnormal. According to these standards the results showed that nearly 50 per cent of all the children were definitely anemic, while 31 per cent had borderline anemia, many of the latter with dangerously low (25 to 30 per cent) hemoglobin levels. Two hundred of the grade school children and 47 of the nursery school group, all in the anemic class, were selected for treatment. The grade children, whose hemoglobin levels were 35 to 70 per cent, were given 0.97 gm. of iron and ammonium citrates orally after each meal. With these, hemoglobin regeneration was rapid, being increased to the level of 75 to 92 per cent within 42 days. The nursery school children were given no medicinal iron, but instead a diet high in iron content. As with the grade school group, there was marked improvement in the physical well-being and the mental alertness of the treated children. In the nursery school group (receiving only food iron) the hemoglobin regeneration was slower, the level increasing to only 60 to 88 per cent even after 10 days on the diets. These results indicate that iron therapy improves the anemic condition and that medicinal iron apparently exerts a particular stimulation to hemoglobin formation.

Metabolic interdependence of vitamin B_1 and manganese—reciprocal neutralization of their toxic effects, D. PERLA and M. SANDBERG. *Soc. Exptl. Biol. & Med. Proc.* **41,** No. 2 (June 1939) pp. 522–527.

This study confirmed earlier observations that rats receiving normal adequate diets and a large excess of vitamin B_1 developed symptoms characteristic of manganese deficiency. The development of these symptoms, namely, interference with lactation, loss of maternal instinct, cannibalism, and progressive loss of fertility, was prevented by the addition of small amounts of manganese to the diet. With the administration of an excess of 400 gamma of vitamin B_1, the symptoms were pronounced in the parent generation and became progressively worse in the F_1 and F_2 generations, the young in the latter case being neglected and eaten in over 90 per cent of the litters. With the addition to the diet of 2 mg. of manganese per rat per day these toxic manifestations were prevented over three generations. Without an excess of vitamin B_1 in the diet this level of manganese interfered with lactation and favored cannibalism, particularly after one generation. These results indicate that manganese, probably acting as an oxidative catalyst, is essential in the utilization of vitamin B_1; they suggest further that a large excess of vitamin B_1 would effect an exhaustion of the available manganese in the tissues, causing symptoms of manganese deficiency to appear. It is suggested, therefore, that the vitamin B_1 requirement of an animal varies with the manganese content of its diet.

G. A.

INSTITUTION ADMINISTRATION

Can you maintain an efficiency quotient in food production? L. WEAVER. *Am. Restaurant Mag.* **24,** No. 3 (March 1940) pp. 28–29+.

The author uses the term "efficiency quotient" as a device to represent the efficiency of returns on food items. For example, 100 per cent E.Q. would signify the maximum number of portions that could be obtained from a given amount. A lower E.Q. might be the result of short purchase weight, waste in preparation, overcooking, too large portions, waste in leftovers. A case study on the preparation of potatoes is reported in chart form, and studies of comparative yields on some meats and vegetables are cited.

Some helpful hints for the menu maker, N. S. MACINTOSH. *Am. Restaurant Mag.* **24,** No. 3 (March 1940) pp. 34–35+.

The following suggestions are given for making menus: Figure costs before placing items on the menu. Build the menu according to the availability of market items and around the meat, which is usually the most costly one. Avoid using: foreign terms, as they are often unfamiliar to customers and service is retarded; the word "special," which has been abused and overworked; a medley of cooking terms or place names, as "broiled fish with fried potatoes," or "roast rack of Jersey pork with southern sweet potatoes." Use the word "new" for vegetables when they are coming into season.

Modern checking system a feature of old Henrici's, H. J. SILBOR. *Am. Restaurant Mag.* **24,** No. 5 (May 1940) pp. 42–43.

Six food-checking machines are used to handle a business of 3,800 meals a day. Two machines are used at the entrances from the serving kitchens to the dining rooms, one at the bakery counter, and one at the cashier's desk for incidentals, while two are kept in reserve for banquets and large parties. The order is written on the guest check. As it is filled at each station the check is dropped into the machine and each item is recorded and priced. Mistakes can be "voided." At the end of the day the grand total should agree with the cash total. Different colored ribbons are used on the machines in the various departments to facilitate analysis of the order. The ease and simplicity with which daily sales figures and cash can be balanced are important features of the system.

Maintaining safe floors, E. O. MCCONOHAY. *Bldgs. & Bldg. Mgt.* **40,** No. 7 (June 1940) pp. 22–23+.

Every type of floor requires special treatment. The author has found that standard methods of waxing asphalt tile are hazardous but that the danger can be avoided by combining the wax with the cleaning material, according to a formula here given. For cleaning integral flooring such as quarry tile and terrazzo, mopping only is recommended. Thorough rinsing after the cleaning process is most important. The use of rubber mats, preferably of the link type, is recommended during inclement weather. Handbooks of techniques, formulas, and safety methods are necessary in training new employees. Supervision and inspection of the work are also essential.

Bedspread buyers' quiz, C. M. Dahl. *Hotel Mgt.* **37,** No. 4 (April 1940) pp. 31, 54+.

This study of purchasing, washing, cleaning, storage, and decorative uses of bedspreads answers questions as to satisfactory colors and sizes of spreads, style trends, precautions to be observed in laundering. Features to look for when buying are explained in detail, and a dictionary of buying terms is included.

Dietitians in private medical clinics, R. BOWDEN. *J. Am. Dietetic Assocn.* **16,** No. 5 (May 1940) pp. 435–438.

While the work of nutrition clinics for free and part-pay patients is attaining a commendable degree of efficiency, particularly in the East, private medical clinics in the West are now establishing nutrition departments for the benefit of pay patients. The aim in both is to instruct the patients so that they may carry on at home. In one successful procedure the physician sends the patient's chart to the dietitian with a written order for dietary

treatment. A dietary history is taken, and the dietitian explains how the patient's program must be modified to meet his special as well as his normal requirements. Instead of outmoded printed diet lists, a special dietary program is arranged to suit each patient's habits of living. Food tables, charts, films, and other devices are used to help instruct the patient and prevent his special diet from becoming monotonous. Nutrition work with pay patients is a comparatively new field, and success depends largely on the dietitian.

The effect of quick freezing on the nutritive values of foods, M. S. ROSE. *J. Am. Med. Assocn.* **114,** No. 14 (April 6, 1940) pp. 1356–1361.

Quick-frozen foods when properly prepared and stored show relatively small nutritional losses. Those that do occur are due to the incidental handling rather than to the quick freezing itself. Reduction of the blanching time to a minimum and cooking without preliminary thawing will eliminate much of the loss of vitamins B_1 and C. The loss of vitamins A and G is not a problem if the food has been properly handled. The vitamin C value depends on many factors, such as botanic variety, soil, climate, age, and conditions between harvesting and freezing. The bacteria content of foods is reduced by quick freezing. Very low temperatures are necessary, the usual range being from 0 to −40°F. The sanitary care of foods before freezing, sufficiently low temperature during storage, and prompt cooking after or without thawing are very important. The author also discusses methods and problems of the process itself.

"Styles" in beef, A. WOOD. *Modern Hosp.* **54,** No. 3 (March 1940) pp. 100–102.

The dietitian is often faced with the problem of adjusting herself to the "styles" in cuts of beef that prevail in the community where she works. To understand them, she must know the location of the muscles in the carcass, their uses, and where to find them in the local cuts. Local terms may most easily be learned by discussion with reliable distributors and by observation in the refrigerators and at the cutting bench.

When cleaning kitchen ranges [editorial]. *Modern Hosp.* **54,** No. 5 (May 1940) p. 106.

At the Veterans' Administration Facility, Bronx, New York, the ranges are cleaned by the following method: A hot, sudsy water is poured over the top of the flat-top ranges as soon as the heat is turned off; it runs into a small groove about one inch deep, and from that drains into a pail through a small outlet. The hot water loosens any hard-caked particles on the range, and these can then be brushed into the drain with a ball type of brush. After this has been done, the range top is flushed again and scrubbed with an abrasive powder and a pad of steel wool. Live steam is used to loosen hard-cooked particles of food around the pipes. Ring-topped ranges are cleaned in the same way, though they do not present the same problem as the flat-top ones.

Figuring food costs rapidly, G. S. SAUNDERS. *Nation's Schools* **25,** No. 3 (March 1940) p. 76; No. 4 (April) p. 76; No. 5 (May) p. 76.

Articles showing the cost per serving of peas, beans, and staples, the figures being based on a sliding scale of purchase and edible-portion costs. [N.B.: Similar tables by the same author appear in current issues of *Modern Hospital.*]

Fair play for floor brushes, C. ETHINGTON. *Nation's Schools* **25,** No. 4 (April 1940) pp. 43–44.

Specifications for floor brushes should state the kind of bristles, size, number of holes in the outside and inside rows, and the depth and diameter of the holes, and should call for cement setting and hand pegging. The proper routine care of floor brushes should be as follows: Start using the new brush on smooth floors; hang it up when not in use; change the handle at least once a week from one side of the block to the other; do not ride the brush as this causes it to wear unevenly; comb it each week to keep the bristles straight; and wash it every 2 or 3 weeks. Directions are given for making a board-and-nails cleaning device which can be screwed down in a convenient place. When the bristles have been worn down until they extend only 2 inches out of the block the use of the brush on rougher

floors and sidewalks is recommended; when only one inch is left, the brush can be used for scrubbing; and when only ¼ inch remains, it can be used for slip-on dust-mop heads.

"Stagger" system stops crowding, J. A. FEINGOLD. *Nation's Schools* **25,** No. 4 (April 1940) pp. 70, 72+.

In Bulkeley High School, Hartford, Connecticut, whose cafeteria accommodates 600 of the 1,900 students enrolled, disturbance was caused when some of the pupils on a floor went to luncheon while the others were still in class. This was remedied by adopting a "stagger" system, under which the pupils come into the lunchroom in an almost continuous stream for 75 minutes. At the first recess period, 300 pupils from the first floor go to the dining room. Ten minutes later 300 more are allowed to go and remain 10 minutes later than the first group. Forty-two minutes after the beginning of the first period 300 more pupils go to the cafeteria from the second floor. There are four service lanes which serve 600 children within 10 to 12 minutes. The pupils are able to spend part of the recess period in the cafeteria and part on the vacant floor levels if they wish. The sales of hot foods have been increased 35 per cent by educational projects integrated into the rest of the school program. Two booths have been erected in the cafeteria for checking some 400 luncheon bags that are brought from home and thus helping to eliminate a tendency to omit lunch.

For a healthier tomorrow, F. L. HOAG. *Prac. Home Econ.* **18,** No. 3 (March 1940) pp. 78–80+.

Reliable studies have shown that of over 6,000 school children 50 per cent came to school without an adequate breakfast, 63 per cent with no milk, and 20 per cent with no breakfast at all. This proves the advisability of having the plate lunch at school furnish half of a child's daily needs, particularly for minerals and vitamins. This is difficult on a 60 to 65 per cent food-cost basis and necessitates a careful analysis of the foods used. The following simple classification is suggested to help establish a foundation for the selection of food items in the order of their nutritive importance: Group I or A foods: milk, fruits, vegetables, and eggs; if one-half of the energy needs are met from this group, the chances are that the daily requirements for protein, minerals, and vitamins will also be met. Group II or B foods: meats, fish, cereals (at least half unmilled), 3 pats of butter, and one tablespoon of sugar. Group III or C and D foods: pies, cakes, pastries, and sweets. Tables and charts show the nutritive value of 5 excellent plate lunches. To compute the nutritional values of large-quantity recipes in cafeteria servings the following are needed: complete data; elimination of the use of trade names; exact weights; size of total recipe yield and of individual portions of each item; fundamental, carefully selected recipes. The author points out that co-operation with nutritionists and home economists in other fields and also with the homes of the children will lead to greater progress than the school alone can accomplish.

Student employees find school cafeteria experience valuable, D. F. BEHM. *School & Coll. Cafeteria* **3,** No. 7 (March 1940) pp. 21, 28.

The school cafeteria is becoming increasingly important in the educational program, and the training of student employees is likewise an important phase of this program. In Syracuse, New York, the high school cafeteria employs students during the serving period at the counters as checkers or doing bus work. They are allowed 17 cents' worth of food a day and in addition are paid in money at the rate of 15 cents a day. The importance of knowing and following instructions is stressed, and a better job or increased pay is the reward for dependability and acceptance of responsibility. The students are carefully introduced to and trained into their jobs and enjoy the advantage of acquiring that "previous experience" which many of them will soon need when as high school graduates they apply for jobs.

Major points for the china buyer's consideration [editorial]. *School & Coll. Cafeteria* **3,** No. 9 (May 1940) pp. 19–21+.

China for cafeterias and dining halls should be in bright, cheerful, stimulating patterns. The advantages of good china are distinctive

designs, ease in cleaning, less breakage, and better sanitation. Avoid heavy weight, which increases tray load. Limit the number of sizes and shapes and choose items that will conserve tray space. Use china that has a tough, hard vitrified body with underglaze decoration. American vitrified china now ranks among the best. According to the National Bureau of Standards, china which is fully vitrified has a water consumption not greater than 0.3 per cent of the dry weight of the biscuit ware. Cups should be of the "integral handle" type, in which body and handle of cup are made of one piece. All ware should be of "first selection." Two or three months should be allowed the manufacturer for filling an order unless a stock item is selected. Fifteen points in the care of china are listed.

School parties in general and one in particular, C. HART. *School Mgt.* **9,** No. 9 (May 1940) pp. 235–237.

For teas and dinners given under the auspices of a school lunchroom system uniform menus should be planned at various price levels so that a child going to school in the west side of the city may get the same amount and type of food for his money as one in the south side. Two sets of menus might be made up, one for the guidance of the manager, giving quantities and prices in detail, and the other merely listing the items on the menu for submission to the organization sponsoring the affair. On the financial side, a percentage allotment must be set up for food and labor. A specific procedure for reimbursing managers is advisable, many systems paying them on an hourly basis within minimum and maximum limits. There should be a definite understanding as to whether or not such items as flowers, candles, linens, and waitresses' dinners are to be included. In the Rochester (New York) system a 5 per cent allowance either way on the number of reservations has been found to be satisfactory. The children who wait on tables should be furnished with white coats or white aprons. Each child can serve 10 or at most 12 persons, as compared with the professional waitress who takes care of from 16 to 20 at a time. The menu, amounts of food used, record forms, and organization used at a banquet for 1,200 are described.

Cleaners for rugs, carpets, upholstery, P. I. SMITH. *Soap* **16,** No. 4 (April 1940) pp. 30–33+.

Both factory and *in situ* cleaning have gradually changed from a manual to a mechanical process. Success of modern *in situ* cleaning is due to the use of highly efficient special detergents, properly designed machines, and skilled labor working on a rigid time schedule. Methods vary, one successful one being as follows: The carpet is vacuumed by heavy-duty ¾ H.P. machines which are equipped with sight glasses to show the amount of dirt removed. The edges of the carpet are then washed by hand. The washing machine follows, cleaning being done by means of two electrically driven rubber bristles and a suction fan; the brushes are fed with the detergent solution used at a temperature of 100°F. Following the brushes comes a squeegee and then another brush which smooths down the pile. From 4 to 8 square yards per hour can be completely cleaned by experienced workers. In factory cleaning, low titer soaps are now used with sulfonated oil and various phosphates such as hexametaphosphate. Detergents for *in situ* cleaning usually contain very little if any soap but are mixtures of sodium hexametaphosphate with the sodium salt of a sulfated fatty alcohol. Advantages of some of the latest synthetic detergents are that they are chemically neutral; do not turn rancid, oxidize, or hydrolyze; do not precipitate calcium and magnesium salts; may be used equally well in both cold and hot solutions; and give increased wetting power and acceleration in cleaning action.

M. S.
M. DE G. B.

MISCELLANY

Meetings. The experiences which Dr. W. W. Bauer, director of the Bureau of Health Education of the American Medical Association, describes in the *American Journal of Public Health* for May 1940 under the title "Healthier Health Meetings" will wake a sympathetic chord in many speakers on other subjects. And those who are responsible for getting the speakers and arranging the meetings will find there some amusing don't's and helpful do's.

"Children in a Democracy." The general report adopted on January 19, 1940, by the White House Conference on Children in a Democracy has been prepared for publication and issued in attractive pamphlet form by the U. S. Government Printing Office for sale at 20 cents a copy.

From Educational Organizations. So many noteworthy publications have come in from a variety of agencies that there is no room to mention them in the usual way, and we regretfully resort to very brief listing. Those for which no price is given are free while the supply lasts.

American Council on Education, 744 Jackson Place, Washington, D. C.: "Reading in General Education: An Exploratory Study" edited by William S. Gray (noted on page 477); "Wanted: A Job!" (an attempt to describe personal characteristics desired by employers, prepared for college students by a conference of business and industrial personnel officers), 20 pp., 5 cents a copy, discounts on quantity orders; "Educational Studies and Their Uses: An Exploratory Study of the Processes of Implementation in Secondary Education," A. C. E. Studies, Series 1, Vol. IV, No. 11, January 1940, 74 pp.; "A Bibliography in General Education" by Earl J. McGrath, reprinted from *The Educational Record* for January 1940, 23 pp; "Accent on Cooperation" by Karl W. Bigelow, reprinted from *The Educational Record* for April 1940, 15 pp.; "The Occupational Adjustment of Youth" and "Community Responsibility for Youth," recommendations of the American Youth Commission of the American Council on Education, 14 pp. and 9 pp., respectively; "The Community and Its Young People" by M. M. Chambers, prepared for the American Youth Commission, 36 pp.

Educational Policies Commission, 1201 Sixteenth Street, N. W., Washington, D. C.: "Educational Policies for Community Recreation" prepared in co-operation with the American Association for Health, Physical Education, and Recreation, 31 pp., 10 cents; "Cultural and Social Elements in the Education of Teachers" prepared in co-operation with the Commission on Teacher Education of the American Council on Education, 51 pp.

U. S. Office of Education, Federal Security Agency, Washington, D. C.: "Family Adjustment to Changes in Income," another in the Socioeconomic Research Abstract Series of the Home Economics Education Service (see December 1939 JOURNAL, p. 734), Misc. 2230–4, 27 pp.; "Curriculum Development in Home Economics in Six Colleges and Universities" (Drexel Institute of Technology, Stout Institute, University of Maine, Michigan State College, Plattsburg State Normal School, and State Teachers College at Buffalo are the institutions whose recent curricular developments are here described and then summarized together), Part II, Series 5, Misc. 2307, 75 pp.; "Educational Directory, 1940": Part III, "Colleges and Universities," 86 pp., Part IV, "Educational Associations and Directories," 72 pp., 10 cents each from Superintendent of Documents, Washington, D. C.; "Cooperative Part-Time Retail Training Programs: Supervision, Coordination, and Teaching" by Kenneth B. Haas, Vocational Division Bull. No. 205, Business Education Series No. 12, 1939, 96 pp., 15 cents from Superintendent of Documents, Washington, D. C.

Adult Education. "A Study of Free Adult Education Interests as Applied to W.P.A. Adult Education in Harlem" by Bessie McIntyre Johnson is reported in a 28-page planographed and sturdily bound pamphlet obtainable from the author at 634 St. Nicholas Avenue, New York City, for 25 cents a copy.

The American Association for Adult Educa-

tion, 60 East 42d Street, New York City, has published a "Checklist of Free and Low-Cost Books and Pamphlets for Use in Adult Education—Exhibited at the Fifteenth Annual Meeting." The price of the 23-page document is 15 cents.

"The Council Woman." Under this appropriate name the new national magazine of the National Council of Jewish Women made its bow in a March-April issue.

"Stories for Parents." Jean Schick Grossman is the author of the four leaflets in the second series issued by the Summer Play Schools Association, 1841 Broadway, New York City. The titles are: "Learning to Use Money," "Keeping Healthy," "No Two Children Are Alike," "Children's Quarrels"; and the price is 5 cents apiece, 10 cents for the set.

"How to Bring Up Fathers." Under this title, Edith M. Stern tells informally and approvingly about home economics courses for boys in *McCall's* for June.

Home Economics in Government Services. An editorial in the March JOURNAL gave the general conclusions from a paper on this subject which Marjorie M. Heseltine and Helen W. Atwater had prepared for a Conference on Opportunities in Public Service, held in Washington, D. C., last November. The full text of the paper, including such information as is available on qualifications, salaries, appointments, and similar topics, has been printed in the February issue of *Women's Work and Education*, the newsletter of the Institute of Women's Professional Relations, and may be purchased at 40 cents a copy from the Institute, Room 203, Post Office Building, New London, Connecticut.

Occupational Guidance. "Finding Your Job," No. 7, Vol. V, of *Building America* tells the main facts about the present and probable future employment situation in the United States, the personal qualities that go to make a good worker, how to learn about jobs, train for them, and apply for them, and also some of the things to do to keep one when you have it. As usual in this series, the material is skillfully presented and effectively illustrated.

Jean Collier Brown of the U. S. Women's Bureau is the author of a pamphlet on "Household Workers," which appears as Occupational Monograph No. 14 from the Science Research Associates, 600 South Michigan Avenue, Chicago, Illinois. Both the advantages and disadvantages of household employment are discussed, and authoritative information is given about the possibilities for the trained worker and the provisions for her training. "Home Economics in Business" is the subject of No. 44 (revised) in the Success Vocational Information Series directed by Chloris Shade and published by Morgan, Dillon and Company, 5154 North Clark Street, Chicago. Anna M. Bruce is coauthor.

Radio Scripts. Scripts of the broadcasts on vocational opportunities in home economics which the California Home Economics Association arranged last spring and which Mrs. Barbara Reid Robson described in the June JOURNAL are available from Mrs. Robson at 1464 LeRoy Avenue, Berkeley, California, at 5 cents apiece, or 25 cents for the set of eight. The vocations considered are teaching, research, institution administration, home economics in business, and hospital dietetics.

Millinery. According to *Vocational Trends* for June, the making of women's hats was revolutionized about fifteen years ago by large-scale copying of exclusive models, with a consequent drop in the price of ready-made hats, the dismissal of many workers, and the disappearance of many special retail hat shops. At present the industry is highly seasonal, not well organized, and offers few steady jobs.

Judging Clothing. "Points That Judges Consider in 4-H Clothing Exhibits" is a well-organized, attractively illustrated, practical bulletin for club girls by Florence L. Hall and Clarice L. Scott; it appears as Miscellaneous Extension Publication 48, U. S. Department of Agriculture.

The Use of a Tail. If to human users foxtails are mainly ornamental, they have de-

cidedly practical value to their original owners. For example, *Science News Letter* says that when he lies down in cold weather a fox blankets his nose and footpads in his warm, fluffy tail.

Community Resources and Education. Metropolitan Chicago is specially referred to in "Educational Use of Community Resources," but many of the suggestions are equally applicable elsewhere. The authors, Jules Karlin and George J. Steiner, had the co-operation of the Chicago public schools in preparing the 56-page planographed pamphlet, and it is published by the Progressive Education Association, 221 West 57th Street, New York City, for sale at 10 cents a copy.

A Complicated Business. "Major Participants in the Construction of a Single-Family House in an Urban Area" is the subject of a full-page chart which *Domestic Commerce* for May 30 reproduces from the report of hearings before the Temporary National Economic Committee. The parties and agencies concerned have to do with transfer of property, financing, land development, insurance, public utilities, and construction itself. The latter includes planning and supervision, sixteen or more types of work given to general and subcontractors, not to mention the concerns which manufacture and distribute at least a dozen types of materials and equipment.

"The Consumer Spends His Income." The attention of JOURNAL readers has already been called to the reports made by the National Resources Planning Board of its studies of consumer income and expenditures, but we have not mentioned this more popular pamphlet version which appeared a year ago. It may be purchased from the Superintendent of Documents, Washington, D. C., for 10 cents a copy.

Hospital Supplies. To make their purchasing of supplies more efficient, many leading hospitals have for thirty years jointly maintained a Hospital Bureau of Standards and Supplies, now at 247 Park Avenue, New York City. The 30th annual report of the Board of Directors, dated 1939, shows the steady growth of its services. Persons connected with laboratory analyses, service tests, and the promotion of simplification and standardization feel perhaps the greatest interest among home economists, but institution managers are of course concerned also with buying procedures.

Better Business Facts. Recent additions to the series of popular "Fact Booklets" issued by the Boston Better Business Bureau deal with "Investment Companies," "Legal Problems," "Buying or Building a Home," and "Domestic Textile Rugs." Single copies may be obtained for 3 cents each on request to any local Bureau or from the National Better Business Bureau, Chrysler Building, New York City.

Public Affairs Pamphlets. Recent titles in this series of reliable popularizations of current questions are: "Adrift on the Land" by Paul S. Taylor, the story of agricultural migrants; "59¢ of Your $1" by T. R. Carskadon, based on the Twentieth Century Fund study of distribution (see page 714 of the December JOURNAL); and "How Money Works" by Arthur D. Gayer and W. W. Rostow, which has special references to war spending and its dangers. The pamphlets are sold for 10 cents each by the Public Affairs Committee, 30 Rockefeller Plaza, New York City.

Family Welfare Association of America. "Highlights" is the title of the new little magazine of the Family Welfare Association of America which is to appear the middle of each month except August and September and which takes the place of the earlier *News Letter* and is intended to keep members and interested laymen in touch with developments in the family welfare field. The price is $1 a year, 15 cents a single copy, and the address remains 122 East 22d Street, New York City. The Association will continue to publish *The Family*, but the addition of the subtitle, *Journal of Social Case Work*, indicates its special scope.

A publication of special interest to home economists is "Short Contacts by the Home Economist in Case Work Treatment," an 11-page mimeographed pamphlet containing two

papers, "From the Point of View of the Home Economist" by Luise Addiss and "From the Point of View of the Case Worker" by Monica Jordan; price 20 cents. In the same series is "Three Studies of Family Case Work Programs," which gives self-evaluations of agencies in Scranton, Ann Arbor, and Springfield (Mass.); price 65 cents. Another useful bulletin is "A Guidebook for Beginners in Public Assistance Work" by Ella Lee Cowgill; price 40 cents, 10 copies for $3.50.

Social Hygiene. Recent publications from the American Social Hygiene Association, 50 West 50th Street, New York City, include: "Illegal and Unethical Practices in the Diagnosis and Treatment of Syphilis and Gonorrhea" by Mary S. Edwards and Paul M. Kinsie, price 10 cents; "Syphilis and Federal Assistance to the States—to Date" by William F. Snow; a folder on "The Medical Charlatan" and a simpler version of the same subject entitled "Jerry Learns a Lesson."

An attractively printed bulletin from the U. S. Public Health Service is called "20 Questions on Gonorrhea." It is "written in layman's language for his use and for the use of the physician and public health educator who want to know how to tell the story of gonorrhea in nontechnical terms," and supplements the more general "Gonorrhea the Crippler." It is on sale by the Superintendent of Documents at 5 cents a copy.

Food Score Cards. A set of 53 cards, described as highly objective, adapted to rapid scoring, and useful in helping students to attain satisfactory standards, has been published by the University of Minnesota Press. It has been developed by the foods section of the division of home economics for use as a measuring instrument in an experiment on the relationship between science prerequisites and sequent courses in foods, conducted under the direction of Clara M. Brown and sponsored by the Committee on Educational Research of the University of Minnesota. The price is 25 cents a set.

Nutrition Ideas for Teachers. Five times a year the Nassau County (New York) Tuberculosis and Public Health Association gets out an attractive, well-edited bulletin called "Ideas: A Magazine for Teachers." The issue for March–April 1940 was devoted to "Nutrition," with "Education for Home and Family Life" to follow. One wishes one saw more frequent examples of such fine teamwork between health agencies and schools.

Canned Foods. The National Canners Association has issued an attractive little pamphlet "Canned Food Facts for Grocers" which gives brief, simple definitions and descriptions of canning processes, seasoning, food values, containers, and labels; that is, the features of canned foods on which information is needed for intelligent merchandising. Since such facts are equally needed for intelligent purchasing, this concise statement would also be helpful to classes in foods and consumer problems. Copies are available free of charge from the Home Economics Division of the National Canners Association, 1739 H Street, N.W., Washington, D. C.

"The Kitchen Front." This is a name now given in England to what is officially described as "guidance of the public in the best use of food during wartime." The program is promoted by the Ministry of Food and the Board of Education; and according to *Housecraft* the national training colleges and the teachers of domestic subjects and the home service staffs of the gas and electric industries are being called on as leaders and demonstrators.

Research under W.P.A. The results of research based on certain W.P.A. projects (entries 3803 to 5137) are listed and briefly annotated in Volume III of the "Index of Research Projects." Those of concern to home economists are to be looked for mainly under such subheads as marketing, standards of living, social work and social agencies (including health and medical care), teaching methods and curricula, adult education.

NEWS NOTES

GENERAL

Autumn Conferences. The following brief paragraphs give the name, place, date, and source of further information about conferences called for the near future:

National Recreation Congress, Hotel Statler, Cleveland, September 30 to October 4; National Recreation Association, 315 Fourth Avenue, New York City.

American Public Health Association, 69th annual meeting, Hotels Book-Cadillac and Statler, Detroit, October 8 to 11; Michigan Committee, 3919 John R. Street, Detroit. Immediately preceding: Health Education Institute, October 6 and 7; American School Health Association, October 7.

Conference of Food Service Directors, Hotel Statler, Detroit, November 7 to 9; Winning Pendergast, Department of Education, 1354 Broadway, Detroit.

Home Economics in the World Federation of Education Associations. The home economics section of this world-wide educational organization is now an established fact, and Dr. B. R. Andrews of Teachers College, Columbia University, is its chairman for two years. Its formation was requested by Miss Eicholtz of South Bend, Indiana, at the Tokyo convention of the Federation in 1937 and was favorably acted on by the governing body. Dr. Andrews wishes to be of any possible service in connection with foreign relations in home economics and has already entered into correspondence with the ministers of education in all Latin-American countries.

Christian Rural Fellowship Essay Contest. The Christian Rural Fellowship offers three prizes ($100, $50, and $25) for the best essays on "What Are the Characteristics of a Christian Rural Community?" The closing date is November 15, 1940. Further details may be obtained at the headquarters of the Fellowship, 156 Fifth Avenue, New York City.

Honor to Dr. Pennington. The American Chemical Society announces that the Francis P. Garvan Gold Medal to honor an American woman for distinguished service in chemistry goes to Dr. Mary E. Pennington of New York City, authority on refrigeration of perishable foods. Presentation will be made at the Society's 100th meeting in Detroit from September 9 to 13, 1940.

ARIZONA

University of Arizona. The annual Aggie Day on April 26 included the usual contests in clothing, related art, and foods and nutrition. A picnic dinner at the farm and the awarding of prizes closed the celebration.

Recent campus visitors have included: Lucy Studley of the University of Minnesota; Evelyn Halliday of the University of Chicago; Mrs. Jessamine Williams, a former staff member now on sabbatical leave from Oregon State College; and Lucia Haley, librarian at Oregon State College.

ARKANSAS

Arkansas Home Economics Association. Speakers and topics at the annual meeting in Little Rock on March 30 included: Jessie W. Harris of the University of Tennessee, who spoke on "Looking Ahead in Home Economics"; Kate Fulton, F.S.A., "Raising the Rural Standards of Living"; and Dr. J. R. Grant, president of Ouachita College and the luncheon speaker, "Modern Parents and Modern Homes." Mena Hogan was elected vice-president, the other officers holding over for another year.

Arkansas State Teachers College. A course in home economics content for teachers in the elementary school was offered at the College this summer, also one in problems for in-service teachers, in which members of the Extension Service, F.S.A., and N.Y.A. co-operated.

University of Arkansas. While Sybil L.

Smith of the U. S. Office of Experiment Stations was at the University in April to inspect home economics research projects, she spoke at a dinner meeting of the Home Economics Club on the League of Nations Nutrition Conference at Geneva in 1939.

The new home economics building was formally dedicated on June 21, 22, and 23, and in connection with this a Family Life Conference was held.

State Board of Education. Alma Keys, state supervisor of home economics, taught courses in Home Economics for Boys and Methods of Teaching Family Relationships at the University of Tennessee this summer and participated in a study by the Commission on Curriculum and Research of the Southern Association of Colleges and Secondary Schools.

Extension Service. Connie J. Bonslagel taught at Colorado State College during the summer session.

Farm Security Administration. Fourteen home supervisors attended summer school.

CALIFORNIA

University of California, Berkeley. Omega Nu, a new home economics honor society, was organized in April at the University with 30 charter members, consisting of 4 juniors, 3 seniors, 14 graduate students, and 9 faculty members. To avoid competition with Alpha Nu, the long-established nutrition honor society, Omega Nu requires its members to have had courses in at least two fields of home economics and will deal with student problems of the new general home economics department.

COLORADO

State Board for Vocational Education. The annual conference for vocational homemaking teachers held in Denver from August 19 to 23 was attended by 125. Alida Fairbanks of Vermont was guest consultant.

State Council on Parent Education. At the Council's annual meeting on May 31, Dr. Gilbert S. Willey of the Denver public schools was elected chairman. The Council serves as a clearinghouse for all work in family life education in Colorado, and many improvements over last year were noted.

Colorado State College. A home economics major was awarded the Phi Kappa Phi plaque for the highest scholastic rating in the entire graduating class of 267.

Dr. Elfriede Brown and Margaret Bremner have resigned to accept positions at Iowa State College and Ohio State University, respectively.

Colorado Women's College. A major change in the home economics program last year was an increased requirement in organic chemistry.

University of Colorado. Summer school work relating to the family was expanded to include a course in Personality Development within the Family, given by Dr. Agnes Tilson Adcock; work in Marriage and the Family, conducted by Dr. Willard W. Waller of Barnard College; and work in child psychology, by Dr. Dorothy Van Alstyne of the Francis W. Parker School, Chicago.

Summer school conferences included a Parent Education Conference, led by Mrs. Sidonie M. Gruenberg; one on Marriage and Family Relationships, led by Dr. Paul Popenoe; and one on Housing in which federal officials co-operated.

CONNECTICUT

Connecticut Home Economics Association. Dr. Alonzo Grace, state commissioner of education, spoke on "Education for Home and Family Life" at the annual meeting in May in Norwalk.

State Department of Education. The homemaking teachers' program-of-work committee met in June to plan the program for the coming school year. It will begin in September with small study-group meetings and will include two state meetings and the publication of a news bulletin. The committee decided that the educational value of neighborhood exhibits is increased by giving high school girls an opportunity to participate in the judging.

Connecticut College. This summer Dr. Margaret S. Chaney taught at the University of Utah, and Margaret Chase and Dorothy E. Lyon took postgraduate work at Cornell.

Margaret V. Davis, formerly of the University of Minnesota, has joined the staff as instructor of foods and nutrition.

During the week end of October 12 the College will celebrate its 25th anniversary, and

the home economics department is collaborating with other departments in arranging for open house at that time.

Student Club. The following papers were presented by student club members at the Student Scientific Conference of the Connecticut Valley Colleges at Dartmouth in April: "A Study of a Standard Budget for Women Workers in New London, Connecticut, for 1940 as Compared with 1938," "The Trend of Basal Metabolic Rates of Some Connecticut College Students over a Period of Seven Years," and "A Study of Time Spent at Lunch by Children in the Connecticut College Nursery School and Its Relation to Individual Dislikes."

St. Joseph College. This term the senior home economics students will construct and furnish in the home furnishings laboratory a three-room apartment typical of those being constructed in Hartford for low-income families. An attempt will be made to keep down costs, partly by using secondhand or unpainted furniture. The account of expenditures will be kept available to visitors to the finished apartment.

University of Connecticut. The new building to house the home economics department has been completed and will be ready for use this term.

DISTRICT OF COLUMBIA

District of Columbia Home Economics Association. At the final dinner meeting of the year, held at the Garden House of the Dodge Hotel on May 23, Mabel Flanley of the Borden Company, chairman of the New York City H.E.W.I.B.'s, spoke on "Home Economics and Public Relations." At the annual business session which followed, Melva B. Bakkie of the American Red Cross was elected president.

H.E.W.I.B.'s. A business meeting was held at the A.A.U.W. on March 21. The last meeting of the year was a buffet supper at the Southern Dairies on June 13.

GEORGIA

University of Georgia. During the past year 83 students spent a full quarter's residence in the four new home management houses. All the houses are brick and have modern equipment and carefully selected, attractive furnishings. The new nursery school, also completed last fall, is arranged for two age groups.

Last year 72 home economics majors served as apprentice teachers in various vocational departments over the state.

More than half of the June 1940 graduates in institution management had secured positions in the spring. Of the 123 students who graduated in June 1939, all who desired have received appointments in some fifteen fields; arranged in order of frequency these are: high school teaching, 46 per cent; home demonstration work, 9; dietetics, 6; home service (public utilities), 4; Farm Security Administration, 2; miscellaneous, 7.

ILLINOIS

Illinois Home Economics Association. The Association had 799 members in June, an increase of 59 over last year.

The annual convention of the Association and the Illinois vocational homemaking teachers will be held in Springfield from October 17 to 19. Mary Lyle of Iowa State College will be the leader for the vocational group.

Student Clubs. The state has 192 affiliated student clubs, located in 12 districts. Programs during the past year were based on problems of vital interest to the girls and the exchange of ideas between the clubs in a district.

University of Illinois. Ruth Lehman of Ohio State University was leader of a two weeks' conference for homemaking supervising teachers in June. It was sponsored jointly by the University and the State Board for Vocational Education and topics included: developing a philosophy of supervision; the goals of a supervisory program; providing experiences which shall serve as a background for student teaching; helping the student teacher to become acquainted with pupil problems and needs; the place of conferences, a variety of experiences, and self-evaluation in promoting growth in the student teacher; what will become of time-honored "devices" of student teaching; the evaluation of teaching and supervision.

Erma B. Christy, supervisor of home economics in Muncie, Indiana, and chairman of the Indiana Curriculum Study, was the leader of a two weeks' curriculum conference at the University from June 10 to 21. Rua Van Horn of the U. S. Office of Education assisted. The Workshop was attended by members of curriculum committees, teacher-trainers, and teachers interested in curriculum study.

INDIANA

Ball State Teachers College. Mrs. Florence Busse Smith taught at Purdue University during the first summer term.

The summer school staff included Dr. Eva Donelson of the University of Minnesota, Glenna A. Henderson of the University of Illinois, and Polly Thomas of Judson College, Alabama.

A second home management house will be in operation this year, with Dr. Donelson in charge.

Indiana State Teachers College. Mrs. Anne Lee's students in supervised teaching and home economics methods are getting community experience at the Rebecca Torner Community House. Projects there have included a sewing conference and activity hour for the Girls' Club, a Mother's Day party, and a community dance and show to raise money for redecorating a room at the Community Center.

All girls in the clothing classes modeled garments they had made at a style show sponsored by Section II of the Home Economics Club in the Student Lounge in the new Union Building.

Last spring the home economics department displayed authentic costume dolls and miniature pieces of period furniture made by the Museum Project of the Indiana W.P.A.

Purdue University. The 1939 response to the first Housemothers' Training School was so enthusiastic that a second full-time one was conducted from June 17 to July 12 for house directors, counselors, and housemothers.

Subjects of summer school courses included Evaluation of Home Economics, Research in Home Economics, and Methods of Teaching Adult and Part-Time Classes in Home Economics, the last taught by Mrs. Florence Busse Smith, state supervisor of adult homemaking. Many three-week unit courses also were offered.

IOWA

Iowa State College. Mrs. Florence Pen Ho has been awarded an A.H.E.A. foreign fellowship for 1940–41 in which the Home Economics Club is co-operating by furnishing one half, or $250. Mrs. Ho plans to complete work for her doctorate in nutrition under Dr. Pearl Swanson.

Katherine Cranor, professor of textiles and clothing since 1922, has retired from active service but will continue to live in Ames.

Dagmar C. Gustafson, instructor in textiles and clothing, has joined the staff of the University of Hawaii, and Ruth Bonde has resigned to become head of the home management department at Pennsylvania State College. Mattie Pattison, formerly of Michigan State College, has joined the home economics education department as assistant professor.

Iowa State Teachers College. Dr. Elizabeth Sutherland, recently of the foods and nutrition staff, has been appointed head of the home economics department to fill the vacancy left by the resignation of Dr. Beatrice Geiger last year.

KANSAS

Kansas Home Economics Association. New officers for 1940–41 are: president, Grace Wilkie, Wichita University; secretary, Margaret Miller, Roosevelt Intermediate School, Wichita.

Fort Hays State College. Gladys Patton spent the summer in Hawaii.

Kansas State College. *Extension Service.* The first Home Demonstration Advisory Council Assembly, held in Manhattan from June 11 to 14, attracted about 125 women from 59 counties. Subjects pertaining to the land were discussed. The women were housed in Van Zile Hall.

Kansas State Teachers College, Pittsburg. Josephine A. Marshall and Lillian Nelson attended the annual regional Conference for Supervisors and Teacher Trainers of Vocational Home Economics in Chicago from April 9 to 12.

University of Kansas. The departments of

home economics and design and the extension division sponsored a Conference on Home Interests on May 3 and 4. The subjects covered included family finance, accessories for the home, hobbies, home furnishings, and landscaping. A tour of homes and gardens of Lawrence was a feature of the program.

Farm Security Administration. Region VII has 41 home management supervisors in its 80 counties. The Farm Tenancy Program is now operating in 17 of these, and the supervisors are working out plans for exterior and interior improvement of the homes.

In Region XII, bimonthly personal development meetings have been held for home supervisors and secretaries.

KENTUCKY

Western Kentucky State Teachers College. The 1940–42 exhibition of Contemporary American Handwoven Textiles assembled by Lou Tate of Louisville was the first loan exhibition displayed at the new Kentucky Building at the College. It was shown from May 5 to 26, having previously been shown in Rochester, New York, and Cincinnati, Ohio.

MARYLAND

School Lunch Institute. An institute for school lunch directors was sponsored at the Hyattsville High School cafeteria from August 26 to 30 by the State Departments of Education and Health. It was intended to set up good standards for food service in the county school lunchrooms; to teach new and attractive types of food to be served; to discuss business methods, buying supplies, checking food costs, and keeping records; and to establish standards for sanitation. Mrs. Mary Riley and Mrs. Gertrude Bowie, chairmen of homemaking for Prince Georges and Montgomery Counties, respectively, were instructors; and Catherine Leamy, state nutritionist, gave a series of talks on nutrition.

MICHIGAN

Michigan State College. *Extension Service.* A conference for the home economics extension staff from June 4 to 7 centered around the theme of a better understanding of the job. Gladys Gallup of the U. S. Extension Service and Dr. Lucile Reynolds of the Farm Credit Administration were out-of-state discussion leaders.

Margaret B. Harris, assistant state home demonstration leader, represented the Michigan Extension Service at a national conference of supervisors of home demonstration work and county agricultural agents in Washington, D. C., in May.

Kalamazoo Public Schools. As part of the Central High School radio program, the Personal and Social Problems classes broadcast panel discussions on "You and Your Health" and "You and Your Job." They later repeated the second for a P.T.A. meeting.

"The Use of Films in Education" was discussed at another P.T.A. meeting; and a color film, taken by Edwin Fox of the physics department and showing over a hundred girls wearing coats, suits, or dresses made in the clothing classes, will serve as a record of accomplishment in clothing classes.

At two dinner meetings sponsored by the home economics department for the faculty of Western State Teachers College representatives from W.P.A. projects, the Extension Service, and the Home Demonstration Service told of home economics work in their respective fields.

MISSISSIPPI

Mississippi Home Economics Association. Ruth Briscoe, chairman of arrangements for the annual spring meeting, had the wholehearted co-operation of all Gulf Coast home economists in planning what proved to be a perfect convention as far as physical arrangements are concerned. Constitution revision in line with modern trends has been achieved.

Membership chairman Brunette D. Hudson reported a total membership of about 5,000, including about 4,300 in high school and college clubs.

New officers for 1940–41 include president-elect, Jane Adams, Wesson; secretary, Lillian Hammons, Natchez; and treasurer, Olive Dowell.

Extension Section. A feature of the spring meeting was a panel discussion on cultural training in the rural home and community,

in which Jewell Garland served as leader and Mary Gardner, Maxine Naugher, Ruth Cain, and Velma Shelton took part.

New officers of the section are chairman, May Cresswell, and secretary, Lorraine Ford.

Institution Administration Section. During the spring meeting a joint session was arranged with the Southeastern States' Dietetic Association. Mrs. Fairfax Proudfit of the University of Tennessee was the nutrition speaker, and Helen George discussed outstanding personalities in institutional work. Frances Robertson reported on the appeal made by the executive committee to the Department of Superintendents of the State Education Association for higher qualifications and better salaries for institution workers.

New officers are Olive Kline, re-elected chairman, and Mrs. Ivon Roberts, secretary.

Social Service Section. At the spring meeting at Biloxi, Marie Hoffman, assistant director of employment of the W.P.A. in Mississippi, spoke on "How Social Service Agencies in Mississippi Operate."

Officers for 1940–41 are Nova Stapp, chairman, and Anna Wheeler Byrd, secretary.

Teachers' Section. New officers are Mrs. Ripple C. Underwood, chairman, and Nora Neil Woodman, secretary.

Mississippi State College for Women. Mrs. Fay McCracken Stockwell of the Institute of Euthenics at Vassar College was a February visitor, and Dr. Marietta Eichelberger, an alumna, was a department visitor in March.

NEW HAMPSHIRE

New Hampshire Home Economics Association. The annual spring meeting was held jointly with that of the Art Teachers Association on May 25 at Pettee Hall, University of New Hampshire. A business session and an illustrated talk on "European Travel" by Hazel E. Hill, extension specialist in clothing, preceded luncheon at the University Commons, when President Fred Engelhardt of the University welcomed the guests. The afternoon program included short films on "Textiles" and "Teaching Creative Design" and a talk on "Art and Home Economics" by Ruth Walstrom of the Nashua High School, assisted by four high school students. Much interest was shown in the exhibits of old glass, lusterware, textiles, Finnish crafts, and a collection assembled by the Museum of Modern Art of useful art objects priced under $10. A tea given at the Home Management House by the home economics students under the direction of Lucille Pepoon and Lois Harrington concluded the afternoon program.

State Department of Education. Florence Jenkins, temporary field agent of the U. S. Office of Education, spent the week of May 13 evaluating the home economics teacher education program in the state.

NORTH DAKOTA

North Dakota Agricultural College. The annual May Festival was held on the campus from May 2 to 4, with 300 high school girls and teachers in attendance. A new feature was the student-led conversation groups at which the following topics were discussed: "What We Like about Home Economics and Changes We Would Suggest"; "What Is a Good Home Economics Club Program?" "How Much Work at Home Should We Do Along with Our Classwork in Homemaking?" "How to Manage to Have a Good Time and Still Do Good Work in High School"; "What Will We Do after We Are through High School?" "What and How Shall I Tell My Friends and Classmates about the May Festival?"

Extension Service. Extension specialists completed another year of major project work for Homemakers' Clubs by holding 47 Achievement Day programs throughout the state featuring style revues, food, clothing and home management pageants, and exhibits.

Farm Security Administration. Mrs. Clara V. Thompson, chief of the home management section for the F.S.A., Washington, D. C., made her first official visit to North Dakota in May. She was accompanied by Conie C. Foote, regional chief of home management.

A series of meetings with F.S.A. home management supervisors has been held at Williston, Bismarck, Jamestown, Valley City, and Fargo.

Vocational Home Economics. Ivol Spafford of the University of Minnesota visited North Dakota Agricultural College and the Fargo N.Y.A. resident training project in May.

Sixty homemaking teachers remained in their communities from four to six weeks this summer to supervise home projects, and this fall home economics education seniors at North Dakota Agricultural College will accompany them for two or three days of such work.

A traveling library of professional books has been started by vocational teachers.

OKLAHOMA

Oklahoma A. & M. College. New summer courses included one in supervision to prepare a selected group of teachers for special leadership responsibilities in the state; one in special problems that concern high school home economics teachers which was guided by a panel made up of a school official, a mother, a high school girl, a teacher trainer or supervisor, a high school teacher, and a specialist in the subject under discussion; and a short course on furniture and clothing renovation.

The household science department conducted its fourth School Cafeteria Manager's Short Course from June 10 to 14, with groups from Indiana, Nebraska, Texas, Missouri, and one manager from California in attendance. George Mueller, national president of the School Cafeteria Association, was a special speaker.

The first Hotel and Restaurant Managers Short Course was held from June 17 to 21, with the School of Commerce co-operating with the household science department in the instruction.

Oklahoma College for Women. Dr. Hazel Frost worked in the home economics division of the State Department of Education during the summer to prepare instructional materials for the use of teachers in furnishing homemaking departments.

Ann Buntin was a member of the summer workshop in Florida conducted under the supervision of the Florida State Department of Education.

Future Homemakers of Oklahoma. On May 28 and 29, Marie Banks of the University of Oklahoma assisted at a camp at Lake Murray for officers and sponsors of seven high school chapters of the Future Homemakers. Plans for next year's club program were discussed.

OREGON

Oregon State College. Frank Ballard, former vice-director of the Oregon Extension Service, became president of the College on July 1.

State Board for Vocational Education. Susan Burson of the U. S. Office of Education was in Oregon from June 24 to July 12 to assist with the annual state conference for teachers of homemaking and a conference for city supervisors, both held at Oregon State College.

On August 1, Mrs. Ruth M. Forest, former assistant state supervisor of home economics education, became director of family life education for the Portland public schools.

Extension Service. A three-week course in Methods in Home Economics Extension was offered by Oregon State College this summer.

Lois Lutz is the newly appointed home furnishings specialist.

PENNSYLVANIA

Pennsylvania Home Economics Association. New officers for the coming year are: president, Constance Herbst, Elkin's Park; and secretary, Anne Forbes, home economics extension representative in Lancaster County.

Department of Public Instruction. The state supervisors of home economics held a two-day working conference with the county advisers at Eagles Mere on June 25 and 26 preceding the annual vocational conference.

Drexel Institute of Technology. Courses in adult education and consumer problems were features of the summer session from June 24 to August 2. Discussions of problems of organization and development of adult group projects of various types; ideals of adult education; approach to family welfare; and selection of methods and materials consistent with the psychology of adult learning, family finance, food consumption problems, and consumer problems in textiles and clothing were among the courses offered. Agnes C. Brown directed the work in adult education, and Ardenia Chapman taught the courses in consumer problems.

Pennsylvania State College. Dr. Ivol Spafford of the University of Minnesota served throughout the summer as leader of the home

economics group participating in the workshop at the College and as family life consultant for the entire group.

Extension Service. Nutrition conferences were held recently throughout the state, each attended by the nutrition specialist and from 7 to 15 workers. Nutrition needs for the state and aims for the coming year were discussed; and an abstract, prepared by the nutrition specialist and presenting new material and outstanding research findings, was given to each county worker. Four or five workers in each group reported outstanding nutrition work in their counties.

This summer Pennsylvania had 7 vacation camps in various sections of the state for farm women of some 20 counties and 10 camps for 4-H girls. Nature study, campfire programs, swimming, other types of recreation, and handicraft were featured at each.

Altoona Senior High School. This fall 116 junior and senior boys are registered for the year-course Social Living that is being offered for the third time. This year sophomore boys are excluded, but they may enroll in the course Family Living, open to both boys and girls. Already 80 have enrolled. The semester course in Clothing for Boys will be offered for the fourth time for those who have had at least one semester's work in home economics, and over 50 have registered. Handwork, machine work, a unit on fibers and textiles, and units and projects in the selection, repair, and care of boys' clothing are included. Boys are admitted to all of the food classes and last term formed 17 per cent of the enrollment.

Philadelphia Public Schools. The division of home economics, under the direction of Helen C. Goodspeed, will increase its output of Red Cross garments this fall by having most of the clothing classes give their full time to this work. Special problems will be planned for the advanced classes to provide the necessary increase in difficulty. Under normal conditions the clothing classes in Philadelphia turn over an average of 3,500 garments yearly.

PUERTO RICO

Puerto Rico Home Economics Association. From March 3 to 9 the Association sponsored the celebration of Improvement of Family Life Week throughout Puerto Rico to interest parents, pupils, and other citizens in improving the health, diet, housing conditions, methods of recreation, vocational interests, ethical and religious activities, and living conditions in general of the family. Representatives from different agencies, departments, divisions, and associations interested in the improvement of family life were invited to take part. Due to the enthusiasm and interest of the local committees organized throughout the island, the results were very encouraging.

RHODE ISLAND

Rhode Island Home Economics Association. New officers for the coming year are: president, Edith La Bree, Hope Street High School, Providence; and secretary, Faith Shedd of East Providence.

The Association's annual field day was held at Rhode Island State College, with Ula Dow of Simmons College as the after-dinner speaker and "Newer Phases of Teaching Foods" as her subject.

The last meeting of the season was held at the Hearthstone, popular tearoom owned and managed by a member, Belle Pepper. After a delicious luncheon, Mrs. Francis Bates, president of the State Federation of Garden Clubs, talked on flower arrangements.

Another of the season's successful meetings was that at which Mrs. Thelma Ervin, head of the glassware department in a well-known Providence store, told about the history of glass. She brought an abundance of beautiful glassware to display and set up several tables in ways suitable for different occasions. One of the local florists collaborated with her, and on one table the flowers in the centerpiece matched those in the decoration on the china.

Rhode Island College of Education. A 30-hour summer course for school lunchroom workers and supervisors was offered at the College as a follow-up of a state survey of school lunches. Mildred Bowers of Branch Agricultural College, Cedar City, Utah, was the instructor.

Rhode Island State College. Jane C. Ebbs, assistant instructor, has been awarded a graduate fellowship at the University of Chicago.

Rhode Island Nutrition Association. Dr. Esther Batchelder is the Association's president for the coming year.

State Nutritionist Appointed. The State Department of Public Health has appointed Mrs. Florence Case as state nutritionist. She will work closely with the departments of education and public health.

SOUTH DAKOTA

County Nutrition Committees. In each county of the state, the home demonstration agent, F.S.A. home management supervisor, county nurse, county superintendent of schools, and all home economics teachers are members of a nutrition committee organized to further a better school lunch program. These committees have been active also in spreading information to rural and town families on the use of surplus commodities.

Farm Security Administration. A series of conferences were held last spring at which F.S.A. home management supervisors planned their year's work to emphasize: adequate food for good nutrition through a plan of production and preservation; a sanitary environment free from fire and accident hazards and including a safe, adequate water supply and sanitary garbage disposal; adequate emergency, corrective, and preventive medical service.

Jennie Grant, associate state director, was married to Cleo Treadwell on May 31.

University of South Dakota. Two W.P.A. projects under the direct sponsorship and supervision of the home economics department are the W.P.A. Nursery School and the Nursery Mothers' Club connected with it, also five three-week courses in Adult Education for Family Living planned to serve supervisors and teachers in this field throughout the state. The loom-weaving project conducted by adult education teachers from the Rosebud Indian reservation interested not only adult education groups but also other students and townspeople of Vermillion.

The Home Economics Club used "Pioneers in Home Economics" as its program theme last year. Back numbers of the JOURNAL OF HOME ECONOMICS and the book of portraits *Home Economists* provided the source material for the talks.

Student Clubs. The May Festival for high school girls was held at South Dakota State College on May 6 and 7. Under the direction of Laura McArthur participation events were planned for all girls rather than competitive contests for a few. The 18 home economics students of Aberdeen won the only prize offered, a picture to be kept in their department a year.

Aberdeen. Dr. Ivol Spafford and Hedda Kafka of the University of Minnesota faculty visited classes in Aberdeen on May 20. Dr. Spafford spoke to members of the core curriculum committee at a luncheon meeting.

Clara N. Flemington, director of homemaking and chairman of the core course committee, is preparing an evaluation report of the first year's experiment with this program.

TENNESSEE

George Peabody College for Teachers. New faculty members are Nellie S. Buckey, formerly of Buffalo State Teachers College, and Dr. Margaret Johnson, formerly of Drexel Institute of Technology.

University of Tennessee. Jessie W. Harris spoke on "Homes in a Democracy" at the meeting of the Georgia Home Economics Association in Macon. She also attended an adult education conference in Louisiana during the spring.

Dr. Druzilla Kent has resumed her duties after a quarter's absence to serve as a field representative of the Southern Association of Schools and Colleges in the Southern Secondary Education Curriculum Study.

A furnished house was rented during the summer quarter to serve as the University's fifth home management house.

Graduate work at the University is of increasing importance. In 1939, 28 master's degrees in home economics were conferred, and in 1940 there are 52 candidates for this degree.

Vocational Home Economics Conference. The annual conference for teachers of vocational home economics of the state was held at the University of Tennessee the week of June 3. Speakers included Jessie W. Harris and Druzilla Kent, both of the University. Each teacher participated in planning the program of work for next year.

TEXAS

East Texas State College. Juanita Rice and Anna Maxwell were on leave for study this summer, and Mrs. Berry Fain was on leave to build a new home.

Summer faculty members included Mrs. Estelle Wallace, co-ordinator of Area 7, and Bessie Wynn of Commerce High School.

North Texas State College. Myra Sowell, who spent the semester working with the Kellogg Foundation, has returned to the campus.

Luella Williams studied this past summer at the University of Chicago under Dr. Kyrk and worked in the Progressive Education Laboratory. Gertrude Watson of Lubbock High School substituted for her the first six weeks.

Marjorie Acheson was a member of the panel that discussed "Educating for Citizenship" at the annual Education Conference in June.

Sam Houston State College. Elsie McElhinney studied at the University of Minnesota this summer, and Carrie Lee Collins at the University of Ohio. Mrs. Charlotte Clark of Texas State College for Women and Mrs. Lucille Smith of Houston substituted for them.

University of Texas. A movie was made of the home economics student teaching center at Manor, Texas, by Dr. B. F. Holland of the School of Education.

Mary Goldman, formerly of Texas State College for Women, is the new director of home management.

Dr. Ruth Leslie is to succeed Helen King, resigned.

State Department of Education. Ata Lee, special agent for the U. S. Office of Education, conducted a ten-day leadership conference for Negro homemaking teachers in June at Prairie View.

A School of Philosophy was held for homemaking teachers at the Adolphus Hotel, Dallas, from August 28 to 30 in co-operation with the U. S. Bureau of Agricultural Economics.

Extension Service. A family from Brown County was selected to demonstrate the "how" of mattress-making in the U. S. Department of Agriculture Building at Washington, D. C., during the extension conference in May.

Bess Edwards, assistant state demonstration agent, visited seven cotton states in connection with the mattress-making campaign.

VERMONT

University of Vermont. The honorary degree of Doctor of Science in home economics was conferred on Bertha M. Terrill in June in recognition of her pioneer work in home economics and her 33 years of service as head of the department of home economics. Professor Terrill, who resigned this June, is now professor emerita of home economics. Dr. Florance B. King of the U. S. Bureau of Home Economics is to succeed Miss Terrill as head of the department of home economics.

Extension Service. Louise Sondermann, home demonstration agent in Orleans County, was married in July and has been succeeded by Alice Whitney of Springfield. Mrs. Helen Whitney has been succeeded in Windham County by Harriet Anderson of Craftsbury. Ruth Jewett, formerly 4-H club leader of Chittenden County, accepted a similar position in Hartford, Connecticut, in July.

WASHINGTON

State College of Washington. Dr. E. Neige Todhunter was a guest speaker at the School Luncheon Conference arranged in Portland on May 4 by the Oregon Nutrition Council, the Oregon Home Economics Association, and the Oregon Dietetic Association.

University of Washington. At the recent Pacific Northwest Conference on Family Relations, Dr. Marion Fish led the round table on "The Economic Basis of Family Life," and Mrs. Frances Olson of the F.S.A. and Dr. Jennie I. Rowntree took part. Edna Martin, home economics supervisor in Seattle, led the discussion on "Education for Marriage and Family Living." Effie I. Raitt was elected president of the Conference for the coming year.

A handwoven hanging, designed and executed by Mary Elizabeth Starr, is being shown in the traveling exhibit of Contemporary American Hand Weaving.

State Department of Vocational Education. The Western Regional Conference for Vocational Education held in Seattle from May 6 to 10 was attended by 11 state supervisors, heads of departments of education in higher institutions, itinerant teacher trainers, leaders in adult and out-of-school-youth education, and city supervisors. Susan M. Burson of the U. S. Office of Education was in charge, and Edna P. Amidon and Beulah I. Coon, also of the U. S. Office of Education, attended. The subject of housing consumed considerable time. The reports of community programs for adults and out-of-school youth indicated marked progress.

Preceding this conference there was a three-day meeting, conducted by Miss Coon, for those in the state interested in research problems.

State conferences for home economics teachers in service were held at Pullman from August 22 to 24 and at Seattle from August 26 to 28.

Spokane. Last year parent education and out-of-school-youth programs were carried out in Spokane and vicinity after contacts had been made with individuals and groups to determine the fundamental needs and interests of homemakers. Mrs. Estelle Hunt was appointed director of the homemaking education program, which included homemaking, leadership in homemaking and home management, and a special training course for group leaders in local P.T.A. units.

Ruth Ades, director of the cafeteria at the Lewis & Clark High School, was appointed to devote part time to the direction of the out-of-school-youth program, which included a course in job application and a homemaking class for employed maids.

WYOMING

Wyoming Home Economics Association. The Association has compiled a directory by counties of home economics trained women in Wyoming which includes their addresses and occupations.

State Department of Education. Four state vocational home economics teachers worked with the state supervisor, Pauline H. Drollinger, at Laramie from June 17 to July 17 preparing curriculum materials for Wyoming homemaking teachers. The group participated in the University curriculum workshop directed by Dr. H. D. Meyering of the Teachers College of Kansas City.

The annual home economics teachers' state conference was held in Laramie from August 19 to 29 with Dr. Muriel W. Brown of the U. S. Office of Education and Alida Fairbanks, state supervisor of Vermont, as guest leaders. "Homemaking Education—A Live Program in the Community" was the theme, and attention was centered on the teaching of family relationships, teacher adjustment, and interpretation and use of data from the National Resources Committee's study.

University of Wyoming. Dr. Paul Popenoe of the Los Angeles Institute of Family Relations spent the week of July 15 at the University to give a series of public lectures on family life. Mrs. Verna J. Hitchcock was in charge of arrangements.

Farm Security Administration. Since many F.S.A. borrowers have not been accustomed to attending meetings, the home management supervisors, in co-operation with the home demonstration agent, will this year help families with home canning through individual visits to individual houses or small group meetings.

OUR CONTRIBUTORS

Maude E. Wallace has been state home demonstration agent in Virginia since 1929 and before that was successively county, district, and assistant state home demonstration agent in North Carolina. She has served as president of the Virginia Home Economics Association and as a vice-president of the A. H. E. A.

Dr. Muriel W. Brown, specialist in family life education for the Tulsa Public Schools and the University of Tulsa when last noted among JOURNAL contributors, was appointed consultant in family life education in the Home Economics Education Service of the U. S. Office of Education in March.

Mrs. Florence Kerr is already well known to JOURNAL readers as assistant commissioner of the Work Projects Administration. **Isabelle Alexander,** assistant supervisor of youth training for the Department of Labour in the Dominion of Canada, is a home economics graduate of the University of Manitoba who has also had experience in agricultural extension work in Manitoba and as general secretary of the Winnipeg Y. W. C. A.

Ruth O'Brien, as chief of the division of textiles and clothing in the U. S. Bureau of Home Economics, has been in charge of the research on cotton utilization done at the Bureau. **Robert J. Cheatham** is head of the cotton-processing division of the Southern Regional Research Laboratory at New Orleans. Before assuming this position he had been in charge of the cotton utilization research activities of the U. S. Bureau of Agricultural Economics since 1927. **Dr. Walter M. Scott** brought to his present position as chief of the cotton chemical finishing division at the Southern Regional Research Laboratory some twenty-odd years of industrial experience as textile chemist and technical adviser. He is one of the founders of the American Association of Textile Chemists and Colorists and has been a member of its council and research committee for many years.

Mrs. Harriet R. Howe is in charge of consumer education in the A. H. E. A.

Mrs. Dora S. Lewis, assistant professor of home economics at New York University and recording secretary of the A. H. E. A., was the latter's official representative at the meeting she describes.

Marjorie M. Heseltine, consultant in nutrition at the U. S. Children's Bureau, is chairman of the social welfare and public health department of the A. H. E. A.

Ruth Van Deman is chief of the information division of the U. S. Bureau of Home Economics and is frequently heard over the air on the Farm and Home hour.

Bertha Bisbey is a professor of home economics at the University of Missouri.

Flora G. Orr, as readers of "Our Contributors" in the May JOURNAL will remember, is temporarily serving as assistant in public relations for the Educational Policies Commission in Washington, D. C.

Margaret B. Hays, Emma C. Petersen, and **Delia A. Taylor** are all on the staff of the U. S. Bureau of Home Economics. Miss Hays is textile physicist, Miss Petersen assistant scientific aide, and Miss Taylor junior textile physicist.